

BLM LIBRARY



88017538

## OIL SHALE TRACT C-b



# SOCIO-ECONOMIC ASSESSMENT



## VOLUME I BASELINE DESCRIPTION



C-b SHALE OIL PROJECT  
ASHLAND OIL, INC.  
SHELL OIL CO. OPERATOR



28517537  
BLM Library  
D-553A, Building 50  
Denver Federal Center  
P. O. Box 25047  
Denver, CO 80225-0047

TN  
872  
.C6  
C22  
1971  
1.1  
E.3

OIL SHALE TRACT C-b

SOCIO-ECONOMIC ASSESSMENT

VOLUME I

BASELINE DESCRIPTION

Prepared in Conjunction With  
the Activities Related to  
Lease C-20341 Issued Under  
the Federal Prototype Oil  
Shale Leasing Program

March, 1976

C-b SHALE OIL PROJECT  
ASHLAND OIL, INC.  
SHELL OIL CO., OPERATOR





## PREFACE

This report deals primarily with socio-economic impacts that will accompany construction, mining and processing of oil shale on Federal Lease Tract C-b in the Piceance Creek Basin. The report consists of two volumes, namely a Baseline Description and an Impact Analysis. It represents another point in the process involving industry, local, regional, state and federal efforts to describe, assess, monitor and manage growth associated with large scale development of oil shale.

Reports can only serve to form conceptual guidelines or to provide useful information to develop plans and strategies of action. The consequences of any assessments and their ensuing actions fall mostly upon those people who must live with the changes. The efforts of government and industry beyond the local level are necessary to any mitigation program. However, in ultimately establishing policies, programs should be focused on the people of the region of impact. An attempt has been made in producing this assessment to be consistent with local and regional interests.

The Baseline Description is a document setting out features of Garfield, Mesa and Rio Blanco Counties in order that a record may be established against which future events may be measured. The Impact Analysis develops projections of population related to construction and operation of Tract C-b, details resulting impacts on the baseline situation and indicates areas requiring mitigation action in order to assure quality growth for the region.



# Index

---

CHAPTER I  
GENERAL INTRODUCTION AND SUMMARY

**1**

---

CHAPTER II  
A HISTORY OF THE PICEANCE CREEK BASIN AREA

**2**

---

CHAPTER III  
LAND USE

**3**

---

CHAPTER IV  
ECONOMY OF THE REGION

**4**

---

CHAPTER V  
POPULATION

**5**

---

CHAPTER VI  
GOVERNMENTAL STRUCTURE AND TAX BASE

**6**

---

CHAPTER VII  
HOUSING

**7**

---

CHAPTER VIII  
MUNICIPAL SERVICES

**8**

---

CHAPTER IX  
PUBLIC OPINION

**9**

---

SOURCES

**A**





# VOLUME I SOCIO-ECONOMIC ASSESSMENT

## TABLE OF CONTENTS

	<u>Page</u>
I. GENERAL INTRODUCTION AND SUMMARY	I-1
A. Introduction	1
B. Summary	1
II. A HISTORY OF THE PICEANCE CREEK BASIN AREA	II-1
A. Introduction and Summary	1
B. History	2
1. The Ute Era	2
2. The Fur Trade Era	4
3. Railroad Construction	4
4. The Meeker Massacre	5
5. Settlers and Towns	5
6. The Interaction of the Railroads with Mining and Trail Herding	8
7. Homesteading	10
8. Natural Resource Development	10
9. Oil Shale	10
10. Land Use Controls	12
III. LAND USE	III-1
A. Introduction and Summary	1
B. Agriculture	2
C. Natural Resources	7
1. Oil Shale	7
2. Coal	9
3. Other Minerals	9
4. Oil and Natural Gas	15
D. Recreation	15
E. Community Development	22
1. Development of Towns in the Region	24
a. Garfield County	24
b. Mesa County	24
c. Rio Blanco County	25
2. Availability of Land for Future Growth	25
3. Land Use Controls	27
a. Rifle	32
b. Meeker	32
IV. ECONOMY OF THE REGION	IV-1
A. Introduction and Summary	1
B. Economic Structure	2
C. Economic Activity	2
1. Employment Rates	2
2. Labor Participation Rates	2

	<u>Page</u>
a. Revenue Base	3
b. Student Enrollment	3
c. Facilities and Curriculum	10
2. Projections	13
C. Transportation	15
1. Air Service	15
2. Railroads	18
3. Highways	18
a. Major Routes	18
b. Construction Projects	18
c. Funding	18
d. Construction Guidelines	25
e. Traffic Counts	25
4. Bus Service	25
5. Trucking Service	25
6. Miscellaneous Services	25
D. Power and Utilities	25
1. Overview of Regional Capacity	25
a. Electricity	25
b. Natural Gas	29
2. Production, Transmission and Sale of Electricity and Gas in Garfield, Mesa and Rio Blanco Counties	30
a. Garfield County	30
b. Mesa County	30
c. Rio Blanco County	30
3. Major Power Companies in the Area	30
a. Electricity	31
b. Natural Gas	33
E. Police, Fire and Ambulance Services	34
1. Police and Sheriff Departments	34
2. Fire and Ambulance Services	34
F. Water, Sewer and Solid Waste Disposal	36
1. Water Supplies	36
2. Sewer Systems	36
G. Solid Waste Disposal	36
H. Health Services	39
1. Medical Facilities	39
2. Medical Manpower	39
I. Human Services	39
1. Public Welfare	39
IX. PUBLIC OPINION	IX-1
A. Introduction and Summary	1
B. Nature of the Surveys	2
C. Local Views About the Quality of Life	3
1. The Physical Environment and Rural Quality of Life	3
2. The Socio-Economic Environment and the Quality of life	8
a. Employment	8

	<u>Page</u>
3.    Income Levels	9
4.    Retail Sales	15
D.    Economic Trends	15
1.    Forecasting Methodology	15
2.    Agriculture	20
3.    Tourism	20
4.    Mining and Manufacturing	25
V.    POPULATION	V-1
A.    Introduction and Summary	1
B.    Current Population Size	2
C.    Selected Demographic Characteristics	7
1.    Ethnicity and In-Migration	7
2.    Education	7
3.    Age	7
D.    Population Dynamics	7
1.    Trends	7
E.    Projected Rates of Growth	13
VI.    GOVERNMENTAL STRUCTURE AND TAX BASE	VI-1
A.    Introduction and Summary	1
B.    Government Structure	4
C.    Revenues	5
D.    Tax Base	12
1.    Property Taxes	12
2.    Sales Tax	16
3.    Revenue Sharing	16
VII.    HOUSING	VII-1
A.    Introduction and Summary	1
B.    Housing Inventory	2
1.    Seasonal and Year-Round Housing	5
2.    Households and Housing Availability	5
3.    Unoccupied Housing	5
a.    Vacancy Rates	10
4.    Housing types and Occupancy Patterns	14
a.    Mobile Homes	14
b.    Owner vs Renter Occupancy	15
c.    Single and Multiple-Unit Housing	22
5.    Condition of Housing	22
C.    Housing Costs	27
1.    Ownership Costs	27
2.    Rental Rates	34
3.    Subsidized Housing	34
D.    Future Housing Requirements	37
VIII.    MUNICIPAL SERVICES	VIII-1
A.    Introduction and Summary	1
B.    Education	3
1.    Organization of School Districts	3

a.	Revenue Base	VIII-3
b.	Student Enrollment	3
c.	Facilities and Curriculum	10
2.	Projections	13
C.	Transportation	15
1.	Air Service	15
2.	Railroads	18
3.	Highway	18
a.	Major Routes	18
b.	Construction Projects	18
c.	Funding	18
d.	Construction Guidelines	25
e.	Traffic Counts	25
4.	Bus Service	25
5.	Trucking Service	25
6.	Miscellaneous Services	25
D.	Power and Utilities	25
1.	Overview of Regional Capacity	25
a.	Electricity	25
b.	Natural Gas	29
2.	Production, Transmission and Sale of Electricity and Gas in Garfield, Mesa and Rio Blanco Counties	30
a.	Garfield County	30
b.	Mesa County	30
c.	Rio Blanco County	30
3.	Major Power Companies in the Area	30
a.	Electricity	31
b.	Natural Gas	33
E.	Police, Fire and Ambulance Service	34
1.	Police and Sheriff Departments	34
2.	Fire and Ambulance Services	34
F.	Water, Sewer and Solid Waste Disposal	36
1.	Water Supplies	36
2.	Sewer Systems	36
G.	Solid Waste Disposal	36
H.	Health Services	39
1.	Medical Facilities	39
2.	Medical Manpower	39
I.	Human Services	39
1.	Public Welfare	39

## IX. PUBLIC OPINION

A.	Introduction and Summary	IX-1
B.	Nature of the Surveys	2
C.	Local Views About the Quality of Life	3
1.	The Physical Environment and Rural Quality of Life	3
2.	The Socio-Economic Environment and the Quality of Life	8
a.	Employment	8
b.	Schools	8
c.	Housing	12
d.	Health Services	12
e.	Fire, Police and Sanitation	12



	<u>Page</u>
f.    Roads	12
g.    Commercial Facilities	18
h.    Local Government	18
i.    Environmental Concerns	18
j.    Growth	21
D.    Public Opinion Regarding Oil Shale Development	21
1.    General Attitudes	21
E.    Knowledge of Oil Shale Development	21
F.    Location of Oil Shale Population Impact	28
G.    Perceived Problems of Rapid Oil Shale Related Growth	28
H.    Perceived Advantages and Disadvantes of Oil Shale Development	31

SOURCES FOR THE BASELINE DESCRIPTION

A-1 - 11

# VOLUME I SOCIO-ECONOMIC ASSESSMENT

## LIST OF FIGURES

<u>Figure Number</u>	<u>Figure</u>	<u>Page</u>
CHAPTER III		
III-1	Existing Land Use in the Region	III-5
III-2	Coal Deposits in the Upper Colorado Region	14
III-3	Thickness of Dawsonite-Bearing Oil Shale in the Northern Part of the Piceance Creek Basin	16
III-4	Thickness of Nahcolite-Bearing Oil Shale in the Northern Part of the Piceance Creek Basin	17
III-5	Oil and Gas Fields in the Upper Colorado Region	18
III-6	Piceance Meadow Deer Count (1953-1972)	20
CHAPTER VIII		
VIII-1	School Districts and Administration Locations, Rio Blanco, Garfield and Mesa Counties, Colorado	VIII-5
VIII-2	Road Map	19
VIII-3	Colorado Highway Approval Hierarchy	22
VIII-4	Distribution of State Highway User Tax Fund in a Typical Fiscal Year	23
VIII-5	Department of Transportation Guidelines for Consideration of Social, Economic and Environmental Effects of Highway Construction	27

# VOLUME I SOCIO-ECONOMIC ASSESSMENT

## LIST OF TABLES

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
CHAPTER III		
III-1	Agricultural Land Areas in Garfield, Mesa and Rio Blanco Counties	III-3
III-2	Land Use by Category in Garfield, Mesa and Rio Blanco Counties	3
III-3	Land Use by Category in Garfield, Mesa and Rio Blanco Counties	4
III-4	Economic Indicators for Garfield, Mesa and Rio Blanco Counties	6
III-5	Land Area by Ownership in Two Bureau of Land Management Planning Units	6
III-6	Cropland Quality Ratings by Square Miles in Garfield, Mesa and Rio Blanco Counties	8
III-7	Federal Oil Shale Lands in Colorado	10
III-8	Non-Federal Oil Shale Lands in Colorado	11
III-9	Federal Oil Shale Lands in Colorado	12
III-10	Oil Shale and Coal Deposits in Garfield, Mesa and Rio Blanco Counties	13
III-11	Hunting Activity in Piceance Basin Management Unit Number 22(a)	21
III-12	Public and Private Recreational Land in Garfield, Mesa and Rio Blanco Counties	23
III-13	Number of Square Miles of Wilderness Area in Garfield, Mesa and Rio Blanco Counties (1970)	23
III-14	Estimate of Total Land Area Most Suitable for Residential Development in Garfield, Mesa and Rio Blanco Counties	26
III-15	Limitations on Septic Tank Filter Fields in Garfield, Mesa and Rio Blanco Counties	26
III-16	Zoning Districts in Rio Blanco County	28
III-17	Zoning Districts in Garfield County	29
III-18	Zoning Districts in Mesa County	30
III-19	Maximum Residential Densities Allowable in Garfield, Mesa and Rio Blanco Counties	31
III-20	Planning Summary for Selected Communities in the Region (1975)	33
CHAPTER IV		
IV-1	Basic Income Sources Ranked in Order of Importance for Garfield, Mesa and Rio Blanco Counties and the Region	IV-3

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
IV-2	Employment by Industry for Garfield County (1950 - 1970)	IV-4
IV-3	Employment by Industry for Mesa County (1950 - 1970)	5
IV-4	Employment by Industry for Rio Blanco County (1950-1970)	6
IV-5	Labor Participation Rates for Garfield, Mesa and Rio Blanco Counties, the Region and the State of Colorado (1950 - 1970)	7
IV-6	Labor Force Participation Rates by Age for Region 11, The Counties of Region 11 and Grand Junction(a)	8
IV-7	Unemployment in the Labor Force in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1950 - 1970)	10
IV-8	Unemployment in the Labor Force by Sex and Age for Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1950 - 1970)	11
IV-9	Attitudes Toward the Local Employment Situation and the Wage Scale in Garfield, Mesa and Rio Blanco Counties	12
IV-10	Employment Status of Residents in Garfield, Mesa and Rio Blanco Counties	13
IV-11	Median Family Income as a Percent of the State Average Income for Garfield, Mesa and Rio Blanco Counties (1950 - 1970)	14
IV-12	Families Below the Poverty Level in Garfield, Mesa and Rio Blanco Counties (1970)	14
IV-13	Income Levels of Families in Garfield County (1960 and 1970)	16
IV-14	Income Levels of Families in Mesa County (1960 and 1970)	17
IV-15	Income Levels of Families in Rio Blanco County (1960 and 1970)	17
IV-16	Families Receiving Social Security, Public Assistance, or Public Welfare Income in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970)	18
IV-17	Retail Sales in Garfield, Mesa and Rio Blanco Counties (1960, 1970, 1974)	18
IV-18	Basic to Local Service Multipliers in Garfield, Mesa and Rio Blanco Counties and the Region	19
IV-19	Structure of Economic Activity as Indicated by Personal Income in Garfield County (1971 and 1977)	21
IV-20	Structure of Economic Activity as Indicated by Personal Income in Mesa County(a) (1971 and 1977)	22
IV-21	Structure of Economic Activity as Indicated by Personal Income in Rio Blanco County (1971 and 1977)	23
IV-22	Structure of Economic Activity as Indicated by Personal Income in Garfield, Mesa and Rio Blanco Counties (1971 and 1977)	24



<u>Table Number</u>	<u>Table</u>	<u>Page</u>
CHAPTER V		
V-1	Population, Families, Households and Persons per Household in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970)	V-3
V-2	Population of Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970, 1973, 1974)	3
V-3	Population of Selected Communities in Region (1960, 1970, 1974, 1975)	4
V-4	Population Density per Square Mile in Garfield, Mesa and Rio Blanco Counties (1960 and 1970)	5
V-5	Percent of the Population Living in Urban Areas in Garfield, Mesa and Rio Blanco Counties (1960 and 1970)	5
V-6	Percent of the Total County Population Living in Selected Towns in Region 22	6
V-7	Ethnic Composition of the Population of Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970)	8
V-8	Nativity and State of Birth of Persons in Garfield, Mesa and Rio Blanco Counties (1970)	9
V-9	Educational Attainment of Persons in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1960 and 1970)	10
V-10	Age Distribution of the Population of Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970)	10
V-11	Population Growth in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1930-1970)	11
V-12	Population Growth in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1950-1960, 1960-1970, 1970-1974)	12
V-13	Growth of Selected Towns in Region 22 (1960-1970)	12
V-14	Percent of the Population Working Outside of the County of Residence in Garfield, Mesa and Rio Blanco Counties (1970)	14
V-15	Births, Deaths and Net migration in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1960-1970)	14
V-16	Births, Deaths and Net Migration in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1970-1974)	15
V-17	Projected Annual Population Growth Rates without Oil Shale Development for Garfield, Mesa and Rio Blanco Counties and the Region (1970-1980)	17
V-18	Projected population Growth without Oil Shale Development for Garfield, Mesa and Rio Blanco Counties	19
V-19	Projected Population Growth for the Three County Region without Oil Shale Development (1970-1980)	20
V-20	Projected Growth without Oil Shale Development in Garfield, Mesa and Rio Blanco Counties (1975-1985)	21

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
CHAPTER VI		
VI-1	Local Government Employment and Payrolls in Garfield, Mesa and Rio Blanco Counties (October 1967)	VI-2
VI-2	Number of Local Governments and Elected Officials in Garfield, Mesa and Rio Blanco Counties (1967)	3
VI-3	County General Government Finances in Garfield, Mesa and Rio Blanco Counties (1970 - Revenues)	6
VI-4	County General Government Finances in Garfield, Mesa and Rio Blanco Counties (1973 - Revenues)	7
VI-5	Selected Municipal Government Finances in Glenwood Springs, Rifle, Grand Junction and Meeker (1973 - Revenues)	8
VI-6	County General Government Finances in Garfield, Mesa and Rio Blanco Counties (1970 - Expenditures)	9
VI-7	County General Government Finances in Garfield, Mesa and Rio Blanco Counties (1973 - Expenditures)	10
VI-8	Selected Municipal Government Finances in Glenwood Springs, Rifle, Grand Junction and Meeker (1973 - Expenditures)	11
VI-9	County Property Tax Valuation by Classes of Property in Garfield, Mesa and Rio Blanco Counties (1970 and 1974)	13
VI-10	Property Tax Valuation and Tax Levied, Including Average Mill Levy for the County and the Total Average Levies in Garfield, Mesa and Rio Blanco Counties (1970 and 1974)	14
VI-11	Property Tax: County Mill Levies and Functional Distribution of County Revenue in Garfield, Mesa and Rio Blanco Counties (1970 and 1974)	15
VI-12	Colorado Income Tax: Individual Adjusted Gross Income and Normal Tax Liability in Garfield, Mesa and Rio Blanco Counties (Fiscal 1970 and 1974)	17
VI-13	Sales Tax Number of Returns, Retail Sales and Net Sales Tax Collected in Garfield, Mesa and Rio Blanco Counties (1964-1970-1974)	18
VI-14	Sales Tax: Number of Returns, Retail Sales and Net Tax Collected in the Cities and Towns of Garfield, Mesa and Rio Blanco Counties (Fiscal 1970)	19
VI-15	Retail Trade by Business Class in Garfield, Mesa and Rio Blanco Counties (Fiscal 1970)	20

#### CHAPTER VII

VII-1	Housing Inventory and Housing Inventory Change in Garfield, Mesa and Rio Blanco Counties and the Region (1960-1970)	VII-3
VII-2	Estimated Housing Inventory and Housing Inventory Change for Garfield, Mesa and Rio Blanco Counties and the Region (1970-1972)	4
VII-3	Seasonal Housing Units as Proportion of all Housing Units in Garfield, Mesa and Rio Blanco Counties and the Region (April 1, 1970)	4

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
VII-4	Changes in Seasonal and Year Round Housing in Garfield, Mesa and Rio Blanco Counties (1960-1970)	VII-6
VII-5	Estimated Change in Year Round Housing in Garfield, Mesa and Rio Blanco Counties, the Region and the State of Colorado (1970-1973)	7
VII-6	Change in Numbers of Households in Garfield, Mesa and Rio Blanco Counties and the Region (1960-1970)	8
VII-7	Estimated Change in Number of Households and Year Round Housing in Garfield, Mesa, Rio Blanco Counties and the Region (1970-1973)	9
VII-8	Unoccupied Year Round Housing in Garfield, Mesa, Rio Blanco Counties and the Region (April 1, 1970)	11
VII-9	Estimated Number of Households and Estimated Housing Inventory in Garfield, Mesa, Rio Blanco Counties and the Region (April 1, 1973)	12
VII-10	Comparison of Unoccupied Housing and Available Vacant Housing in Garfield, Mesa and Rio Blanco Counties and the Region (April 1, 1960 and April 1, 1970)	13
VII-11	Mobile Homes and Conventional Housing Structures in Garfield, Mesa, Rio Blanco Counties and the Region (April 1, 1960)	16
VII-12	Selected Information on Mobile Homes and Conventional Housing in Garfield, Mesa and Rio Blanco Counties and the Region (1970, 1960-1970)	17
VII-13	Estimated Number and Changes in Numbers of Mobile Homes and Conventional Housing Structures in Garfield, Mesa and Rio Blanco Counties and the Region (1970-1973, 1973)	18
VII-14	Tenure of Year Round Housing in Garfield, Mesa and Rio Blanco Counties (1960, 1970)	19
VII-15	Housing Tenure in Garfield, Mesa and Rio Blanco Counties (1970, 1972, 1973 est.)	20
VII-16	Tenure of Conventional Housing Units in Garfield, Mesa, Rio Blanco Counties and the Region (1970)	21
VII-17	One-Unit and Multiple-Unit Housing Structures in Garfield, Mesa and Rio Blanco Counties (1960, 1970)	23
VII-18	Changes in One-Unit Housing Structures, Multiple-Unit Housing Structures, Conventional Housing and Mobile Homes in Garfield, Mesa and Rio Blanco Counties (1960, 1970)	24
VII-19	Single-Unit Housing and Multiple-Unit Housing as Proportions of All Conventional Housing Structures in Garfield, Mesa, Rio Blanco Counties and the Region (1970)	25
VII-20	Plumbing Facilities in Year Round Housing in Garfield, Mesa and Rio Blanco Counties (1970)	26
VII-21	Water, Sewage Disposal and Heating Facilities in Year Round Housing in Garfield, Mesa and Rio Blanco Counties (1970)	28
VII-22	Housing Built During Specified Time Periods in Garfield, Mesa, Rio Blanco Counties and the Region (pre 1939, 1965-1970)	28

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
VII-23	Overcrowding of Housing in Garfield, Mesa, Rio Blanco Counties and the Region (1970)	VII-29
VII-24	Value of Owner-Occupied Units in Garfield, Mesa, Rio Blanco Counties and the Region (1970)	30
VII-25	Estimated Family Incomes, by Percentile Groups in Garfield, Mesa and Rio Blanco Counties (1973)	31
VII-26	Estimated Household Incomes, by Percentile Group in Garfield, Mesa and Rio Blanco Counties (1973)	32
VII-27	Value of Single Residences, Multiple Housing Structures, and of Residential Remodeling as Indicated by Building Permits in Garfield, Mesa, Rio Blanco Counties and the State of Colorado (1974)	33
VII-28	Gross Rents or Renter-Occupied Units in Mesa, Garfield, Rio Blanco Counties and the Region (1970)	35
VII-29	Number of Subsidized Housing Units in Garfield, Mesa and Rio Blanco Counties and the State of Colorado (1973)	36
VII-30	Changes and Estimated Changes in Number of Households in Garfield, Mesa and Rio Blanco Counties (1960-1970, 1970-1973, 1973-1978)	38
VII-31	Projected Housing Requirements by Tenure for Garfield, Mesa and Rio Blanco Counties and the Region (1973-1987)	39

#### CHAPTER VIII

VIII-1	Closing Day Membership by School District in Garfield, Mesa and Rio Blanco Counties (1964-65 - 1974-75)	VIII-4
VIII-2	Pupil Membership and Related Information by District School for Garfield, Mesa and Rio Blanco Counties (Fall, 1974)	6-9
VIII-3	Comparison of Enrollment, per Student Expenditure, and Mill Levy for All Districts in Garfield, Mesa and Rio Blanco Counties (1974)	11
VIII-4	Age of Existing School Buildings by District in Garfield, Mesa and Rio Blanco Counties (1971)	12
VIII-5	Existing Educational Facilities by School District in Garfield, Mesa and Rio Blanco Counties	14
VIII-6	Consolidated Financial Information on School Districts in Garfield, Mesa and Rio Blanco Counties	16
VIII-7	Assessed Valuation Present and Projected by School District for Garfield, Mesa and Rio Blanco Counties	17
VIII-8	Distances and Routes Between Selected Cities in Garfield, Mesa and Rio Blanco Counties	20
VIII-9	Current Highway Construction Projects in Garfield, Mesa and Rio Blanco Counties (Route, Type of Facility, Project Number, Length, Type of Work and Approximate Completion Date)	20
VIII-10	Construction Budget Categories and Anticipated Expenditures in Federal Aid and Matching State and Local Funds for Colorado (1975-1976)	24



<u>Table Number</u>	<u>Table</u>	<u>Page</u>
VIII-11	County Roads - Local, State and Federal Receipts and Balances for Garfield, Mesa and Rio Blanco Counties (1974)	VIII-24
VIII-12	County Roads - Expenditures and Balances for Garfield, Mesa and Rio Blanco Counties (1974)	26
VIII-13	Average Day of the Week Traffic Counts for Four Stations in or Near the Three County Area (Actual Counts)	26
VIII-14	Trucking Services in Garfield, Mesa and Rio Blanco Counties	28
VIII-15	County Sheriffs and Municipal Police Departments in Garfield, Mesa and Rio Blanco Counties	35
VIII-16	Fire Protection in Selected Cities of the Region	35
VIII-17	Municipal Water Systems in Selected Cities in the Region	37
VIII-18	Municipal Sewer Facilities in Selected Cities in the Region	37
VIII-19	Solid Waste Disposal Facilities in Selected Cities in the Region	38
VIII-20	Hospitals in the Region	40
VIII-21	Other Health Facilities in the Region	41
VIII-22	Health Care Manpower in Garfield, Mesa and Rio Blanco Counties (1971)	42
VIII-23	Health Planning in Garfield, Mesa and Rio Blanco Counties	43
VIII-24	Public Welfare Programs in Garfield, Mesa and Rio Blanco Counties (August, 1972)	44

#### CHAPTER IX

IX-1	Positive and Negative Aspects of Life in the Region as Perceived by Area Residents	IX-5
IX-2	Hierarchy of Community Priorities as Ranked by Residents of the Region	6
IX-3	The Top Four Community Priorities as Ranked by the Residents of Grand Junction, Glenwood Springs, Rifle and Meeker	6
IX-4	Ranking of Most Important Problems of the Area by Garfield County Influentials	7
IX-5	Rangely Resident's Opinions on Area Problems	7
IX-6	Regional Resident's Attitudes Toward the Local Employment Situation	9
IX-7	Employment Characteristics of Residents of Garfield, Mesa and Rio Blanco Counties	9
IX-8	Regional Resident's Attitudes Toward Quality of Instruction in Local Schools	10
IX-9	Meeker Resident's Opinion on Local Education	11
IX-10	Rangely Resident's Opinions on Local Education	11
IX-11	Community Resident's Perceptions of Housing Availability in Grand Valley, Meeker and Rangely	13
IX-12	Regional Resident's Attitudes Toward Local Housing	14
IX-13	Regional Resident's Attitudes Toward Community Health Services	15

<u>Table Number</u>	<u>Table</u>	<u>Page</u>
IX-14	Meeker and Rangely Resident's Attitudes on Law Enforcement and Fire Protection	IX-16
IX-15	Meeker and Rangely Resident's Attitudes on Transportation	17
IX-16	Meeker and Rangely Resident's Opinions on Local Government	19
IX-17	Regional Resident's Attitudes Toward Air and Water Pollution	20
IX-18	Meeker Resident's Attitudes on Land Use Control	22
IX-19	Community Resident's Attitudes on Maximum Desirable Population Growth for their Communities	22
IX-20	Regional Resident's Attitudes Toward Population Control	23
IX-21	Garfield County Resident's Attitudes on Oil Shale Development in the Area	24
IX-22	Summary of Regional Respondent's Attitudes Toward Economic Development	25
IX-23	Regional Resident's Attitudes Toward Oil Shale Development	26
IX-24	Colorado Voter's Opinions on Oil Shale Deveopment	27
IX-25	Colorado Voter's Opinions on Experimental Oil Shale Development	27
IX-26	Garfield County Influential's Knowledge of Oil Shale Development and Colony Development Operation	29
IX-27	Rangely and Meeker Resident's Opinions on Oil Shale Related Growth	30
IX-28	Grand Valley Resident's Opinions on Oil Shale Related Population Growth	32
IX-29	Grand Valley Resident's Attitudes on New Towns	33
IX-30	Garfield County Influential's Opinions on Population Growth and Oil Shale Development	34
IX-31	Attitudes of Area Respondents Toward Growth Caused by Oil Shale Development	35
IX-32	Garfield County Influential's Opinions on Using the Local Work Force for Oil Shale Development	36
IX-33	Regional Respondent's Attitudes on Perceived Benefits of Oil Shale Development	37
IX-34	Regional Respondent's Attitudes on Perceived Detrimental Effects of Oil Shale Development	38
IX-35	Colorado Voter's Opinions on Advantages of Oil Shale Development in Colorado	39
IX-36	Colorado Voter's Opinions on Disadvantages of Oil Shale Development in Colorado	40

---

CHAPTER I

GENERAL INTRODUCTION AND SUMMARY

---



## CHAPTER I      GENERAL INTRODUCTION AND SUMMARY

### A.    Introduction

This report presents social and economic characteristics describing Garfield, Mesa and Rio Blanco Counties in Colorado. The report draws upon numerous studies including early and recent census reports, other environmental impact analyses, engineering studies, local and state documents, interviews and public opinion polls. In every instance, the most recent information available is used. Much of the data is taken from studies which came out in 1974 and 1975.

This analysis is done to provide a baseline or point of reference against which measures may be made of changes brought about by oil shale development, particularly those changes related to Federal Oil Shale Lease Tract C-b. Tract C-b is 5100 acres of land located in the Piceance Creek Valley about seventeen miles west of Meeker in Rio Blanco County. The report focuses mainly upon Garfield, Mesa and Rio Blanco Counties and somewhat upon the towns of Glenwood Springs, Grand Junction, Grand Valley, Meeker, Rangely and Rifle. Particular attention is paid to Meeker and Rifle because these towns are the principal focus of the impacts discussed in the second volume of this report. The impact volume gives manpower projections, details the socio-economic impacts resulting from growth and explains the various mitigation alternatives and procedures that might be implemented to reduce adverse socio-economic impacts.

The actual area of impact could be considered on a regional level, in which case the Rocky Mountain States would be viewed as the focus of impact projections. Although this wide area is addressed in the section on mitigation in the impact report, specific impacts for the Rocky Mountain Region are not considered in either the baseline or impact volumes. Garfield, Mesa and Rio Blanco Counties are described in some detail considering that the first line of action for industry is to project and manage impacts at the regional and municipal level, where most oil shale development is scheduled to occur. The cities of Rifle and Meeker are discussed in great detail because they are most likely to be affected by the C-b Oil Shale Project. It is indicated in the impact volume that Rifle and Meeker will require great attention if a successful mitigation program is to be achieved.

### B.    Summary

The baseline report consists of the following ten chapters:

- I.    General Introduction and Summary
- II.   The History and Culture of the Piceance Creek Basin Area
- III.   Land Use

- IV. Economy of the Region
- V. Population
- VI. Governmental Structure and Tax Base
- VII. Housing
- VIII. Municipal Services
- IX. Public Opinion

In Chapter II, the history of the area is described. The chapter shows that a wide variety of cultural groups used the Piceance area for many diverse purposes. Among the groups who have lived in or used the area are Spaniards, Ute Indians, trappers, miners, cattlemen, railroadmen, homesteaders, tourists, energy-related workers and present inhabitants. Although few persons live in what is now generally called the Piceance Creek Basin, the towns and counties bordering it consist of several unique cultural groups including ranchers, farmers and trades people. The second part of this chapter is an attempt to describe the present social and cultural features of the area.

Chapter III provides discussion of land use in the regions, counties and cities. These uses include agricultural, residential, urban development, natural resources, recreational and future alternatives. The chapter also discusses land use controls specifically related to Meeker and Rifle.

The economy of the three county region is discussed in Chapter IV. The transition taking place in the economy of the area is a major emphasis of this chapter. The replacement of agriculture by the trade, services and construction sectors seems to be apparent for the near future in the absence of oil shale development. Income and employment trends in the area are also shown here.

Chapter V discusses population attributes in the three county region. A demographic profile is presented describing the statistical characteristics of area residents during the last several decades. The chapter includes data on county and town populations, densities per square mile, persons living in urban areas, age, ethnicity, education, nativity of residents and a view of population dynamics including some projections of future growth without oil shale development.

Chapter VI describes the governmental structures of the cities and counties and details the financial condition of the area. Discussed are the subjects of budgets, tax bases, personal income, revenue and general government finances. A glossary of financial accounts is provided at the end of the chapter.

Housing is the subject of Chapter VII. The housing situation is described by reviewing figures on the housing inventory, seasonal and year-round housing, vacancy and occupancy rates, housing conditions and housing costs. The limited availability of housing and the increased use of mobile homes and multiple-family structures in the area is noted.

In Chapter VIII, there is a discussion about the capacity and elasticity of municipal services and physical infrastructures of counties

and towns in the region. Covered in the review are education, transportation, power and utilities, fire, police and ambulance services, water and sewer, hospitals and nursing homes, human services and recreation. Most community services are available to residents of the region. However, services do vary by locale and some are available only at a considerable distance. Almost all of the services are operating at or near capacity and improvements are traditionally made only when demand is clearly evident.

Chapter IX summarizes several public opinion polls that have been conducted regarding oil shale development. Among the issues mentioned in this chapter are opinions about the physical environment and rural quality of life, the values and priorities of area residents, employment, schools, housing, education, health services, fire, police and sanitation, roads, retail facilities, local government, growth and oil shale development.





---

CHAPTER II

A HISTORY OF THE PICEANCE CREEK BASIN AREA

---



## CHAPTER II      A HISTORY OF THE PICEANCE CREEK BASIN AREA

### A.    Introduction and Summary

This chapter is a history of the Piceance Creek Basin area. The chapter focuses upon that geographic area where the present counties and towns that are the subject of this report now exist. The early groups that made use of the area and the affects they had on development of the land, the resources of the basin and current settlement patterns are also considered.

Only a loose generic term, the Piceance Creek Basin once included areas of Wyoming and Utah as well as northwestern Colorado. Now it is usually defined as being principally in Rio Blanco County with some overlap in Garfield County to the south. Piceance Creek itself starts east of the Rio Blanco Store and runs west and north in a semicircle for about 45 miles to the White River. Along the way it is fed by more than half a dozen other north-flowing creeks. Roughly bordered on the north by the towns of Rangely and Meeker and to the south by DeBeque, Grand Valley and Rifle, the Piceance Creek Basin consists of a high plateau cut by valleys formed by Piceance, Douglas, Roan and Parachute Creeks.

The basin has a history of a wide and varied use by man. In the past century the land has undergone changes as a result of grazing by cattle and sheep, range management, exploration for oil and gas and shale oil exploration.

Terrain and climate have largely determined the basin's prior land use. The rolling uplands of the Roan Plateau, with some elevations above 8,000 feet, serve as spring and autumn range for both wildlife and domestic livestock. Early autumn snows at higher elevations, where the best summer range is found, force the animals to drift to lower country by September or October.

For centuries prior to the arrival of Europeans, it was inhabited by nomadic Ute Indians, who were called the "Sky People" by some of the Plains' tribes. The Utes roamed the Piceance Creek basin following the deer and elk herds and living off the land. They acquired horses in the 1600's which led to a dramatic change in life style.

In 1776, Spaniards from New Mexico explored the region as part of a potential route to California. In the 1820's, trappers seeking beaver pelts increased the white man's knowledge of the terrain, and in the 1840's surveyors crisscrossed the region seeking better overland routes to the Pacific coast. After railroad tracks were laid across southern Wyoming, and later next to the Colorado River along the southern edge of the Piceance Creek Basin, and once the Utes were removed to north eastern Utah in 1881, the land took on a more important role as range-

land for cattle.

Open to all comers, the native grasslands were excellent for fattening cattle before they were shipped to Aspen and Leadville to feed the miners or further east to slaughterhouses in cities along the Rockies' Front Range. After overgrazing took its toll of the grasses there was a decline in the number of cattle followed by a rapid increase in the number of sheep. Until the end of World War I, many unsuccessful attempts were made at dryland farming. Further destruction of the grasses by plowing was a result. The loss of the grass, whose dense roots held the topsoils in place, also caused an increase in erosion and aggravated the problem of salinity out-flow from the highly alkaline and saline soils.

Fishing, hunting and other tourist development has been concentrated mostly in the high country to the east. However, the Piceance Creek Basin has long been noted for its mule deer and usually has one of the highest ratios of hunter-success in Colorado. President Theodore Roosevelt's hunting expeditions around the turn-of-the-century brought early fame to the White River country and out-of-state hunters are still an important part of the local tourist revenue. The severe winters that doomed attempts to homestead or farm atop the higher plateaus and mesas also have taken periodic toll of the region's large migratory deer herd. The herd's numbers have fluctuated dramatically due to harsh climate, droughts, and early human encroachments from Indians, stockmen and hunters. The herd has tended to reestablish itself quickly, however, especially since wolves, mountain lions and other major predators have been virtually eliminated.

In the face of intense use of the land since the Ute Indians' removal in 1881, attempts at control have been slow in developing. Land use planning by federal, state and local agencies remains incomplete. Significant limits on water availability and delivery for both agricultural and industrial use still exist primarily because of recurring drought and the lack of adequate storage facilities. Ground water supplies are appreciable, but estimates of their potential vary widely. Following the trail herd era, growth primarily resulted from oil and gas exploration, mining for coal, and oil shale development. The towns that border the area developed pragmatically, near sources of water, on transportation routes such as stage routes and along railroad lines. Other towns served as central supply spots for ranches or were near coal and mineral deposits.

The following sections describe, in more detail, the people who have inhabited the Piceance basin and the diverse use they have made of it.

## B. History

### 1. The Ute Era

Seasonal human use of the basin extends far back into the undated archaeological past when primitive Indians gathered food in the area. Their use of the high plateaus and mountain parks was restricted to fishing, berrying and hunting. There was little settled community living by the nomadic Ute tribesmen in the 17th, 18th and 19th centuries, except briefly in the winters. They continued to scatter each summer even after their

removal to Utah in 1881. Frequently, they shifted the location of base camps in order to follow the wildlife herds which migrated freely with the change in seasons. A Ute word meaning "tall grass" was reputed by some pioneers to be the source of the term Piceance (pronounced Pie-cee-ance or, more commonly now, Pee-ance).

Prior to the mid-1600's the Utes had no farm tools. The weapons were extremely crude consisting mostly of bows and arrows, the lance and the stone axe. Shelter usually consisted of hide tepees. Each spring the Utes assembled for their traditional celebration Bear Dance. In addition to the three-day-long Bear Dance itself, the two week encampments also served for courtship, marriages and wide-ranging council discussions before the Ute families scattered to their favored high country summer areas.

As a more complex tribal organization developed, winter villages came into existence in the lower sheltered valleys. One village was located along Plateau Creek, another near the present town of Rangely, and a third at Old Squaw Camp under the Grand Hogback. The three bands of the Northern (or White River) Utes seem to have numbered no more than a few thousand at any time.

Social changes came drastically and dramatically when the Utes acquired horses and later, guns. Some initial trading for horses, using hides and meat in exchange, seems to have taken place in the 1630's when the southern Utes, traded through Spanish settlements in northern New Mexico. The horse assumed such importance for the Indians that it became an object of religious worship. A man's prestige was judged by his horsemanship and his wealth by the number of horses he owned. Prevailing prices for horses, however, were so high that some Utes soon began trading their children to the Spanish in order to acquire more animals. Trained by the Spanish as sheep and cattle herders, these Ute children soon became very expert in horsemanship. Their generation probably initiated the dynamic change in tribal organization when they returned north, often bringing small groups of horses with them. The abrupt transition from a primitive tribe to a recognized "nation" took less than 50 years and had been completed nearly a century before the first white men traveled into the Piceance Creek basin in an expedition led by the Franciscan priest Silvestre Velez de Escalante.

Escalante's purpose was to explore the possibility of establishing a chain of missions between Santa Fe, New Mexico, and the Bay Area of San Francisco. His ten man expedition hoped to avoid the difficult, semi-arid wastelands of the lower Southwest and the hostile Indian tribes living there by traveling north through western Colorado near the present location of Rangely.

The expedition's whole journey took five months lasting from July 29, 1776, to January 2, 1777. Shortly after it was over, Escalante published the daily notes he had made on the trail in the form of a journal. His party entered the Piceance Creek basin September 6, 1776, by scaling the cliffs at the head of Roan Creek and walking about 50 miles northwest to



Rangely in a period of five days. On his trip through the basin, the Franciscan recorded numerous citations of abundant "good pasturage" meaning grassland he felt necessary for successful Mission establishment. Escalante did record seeing grasslands of poor pasturage or of sagebrush.

## 2. The Fur Trade Era

For some 50 years after Escalante's travels there is no recorded European entry into the Northern Ute territory. Then trappers moved in to take advantage of a London fad - beaver hats. In the late 1820's top hats made from beaver pelts suddenly became the "rage" for gentlemen in the English king's court. From this shift in fashion 5,000 miles distant, the boom in beaver pelts forced intense acceleration in exploration of the Rocky Mountain West's high country. The exploration lasted only for a brief decade until beaver top hats fell from fashion as quickly as they had once become indispensable.

Many of the early mountain men had been members of the Lewis and Clark, Pike and Stephen Long expeditions during the early 1800's. Though none of the groups had actually entered Ute territory, the individual trappers roamed far, wide and free on their own. And through the political influence of the fur companies, both official and quasi-official expeditions were soon outfitted and trading posts began opening up in the high country. Thus, the fur trade era, spanning only the 1830's, provided some detailed reconnaissance of an obscure geography that until then was almost wholly unknown to the Anglos. It led to even more intensive exploratory surveying in the next two decades, which, in turn, produced the explosive mining era of 1858-1893. After the Leadville silver discoveries of 1877, the mining boom's impact was felt even more directly in the Ute territory. After Leadville boomed, the clamor for railroads linking the supply and market towns of the region became an irresistible public demand.

## 3. Railroad Construction

For the Piceance Creek basin and all Northern Ute territory, the intensity of General William J. Palmer's drive to complete the Denver, Rio Grande and Western Railroad was an even more immediate threat than the completion of the Union Pacific across southern Wyoming. Palmer was spurred by competition with the Colorado Midland Railroad to reach the silver mines of Aspen first, though his main thrust was for a transcontinental route. Palmer was shrewd, or lucky, enough to preempt the Colorado River for his route. This led Colorado Midland to seek an alternative route and to explore the Piceance Creek and the White River. Similar survey parties from the Denver and Salt Lake Railroad staked out a route west of Craig on the Yampa River. The Utes saw both of these routes as direct threats. As it turned out, neither Colorado Midland nor the Denver and Salt Lake Railway came anywhere near the Piceance Creek basin before each line went bankrupt. To the Northern Utes, however, the frantic activity of railroad competition threatening to bisect their land heavily contributed to a mood of explosive resentment. Though not the immediate cause of the ensuing Meeker Massacre,

the pressure on the Utes from the railroads substantially added to an already long list of other grievances, especially numerous treaty violations. Even more exasperating, government deliveries of contract beef and treaty goods were notoriously inefficient. Corruption and bureaucratic snarlups were so rife that destitute Northern Utes would go to Rawlins, Wyoming only to discover that whole trainloads destined for them had never been off-loaded or were rotting in warehouses. It frequently took more than a year merely to move a fraction of these goods, promised under the treaties, from Rawlins to the White River agency.

#### 4. The Meeker Massacre

For the Ute Indians and the Piceance Creek Basin, the consequences of the Meeker Massacre of 1879 were far more important than the immediate uproar created by the killing of the newly appointed agent, Nathan C. Meeker, and eight of his White River Indian Agency employees. Arriving at the White River Agency on May 15, 1878, with his wife and daughter, Meeker's first move was to order the relocation of the agency from Agency Park to Powell Park, which is about four miles downstream from the present site of the town of Meeker. His aim apparently was to have the grasslands of Powell Park plowed for winter wheat planting, a first step in attempting to end nomadic hunting and convert the Utes to agriculture. He also used tribal funds to have irrigation ditches dug.

Unfortunately for Meeker, Powell Park had long been a traditional Ute horse race course and winter horse pasturage and they bitterly and vocally resented his plowing and fencing. The agent called for cavalry troops from Fort Laramie to control the tribe; the Utes responded by buying 500 new Winchester repeating rifles from a trading post. North of Meeker, the Army troops, commanded by Major Thomas Thornburg, were ambushed, pinned down, and defeated. When word reached the White River Agency, some of the younger Utes promptly went on a rampage and killed all nine of the male agency employees. Their aging Chief Douglas did succeed in getting the white women and children to safety at his home camp on Plateau Creek, but their 23 days of "captivity" only served to heighten calls for swift revenge on the tribe.

While unanticipated, the events were skillfully used on behalf of mining and agricultural interests to virtually force the end of any Indian land title in Colorado. All the Northern Utes were forcibly evicted as well as the Uncompahgre Utes, who were wholly innocent of participation. In addition, the Southern Utes were restricted to a reservation in the extreme southwestern part of the state and their title to the richly mineralized San Juan region was extinguished without compensation. The last of the White River and Uncompahgre Utes left Colorado on September 1, 1881, arriving at their new Uintah Reservation in the desert land of northeastern Utah 12 days later. Cattlemen, miners, farmers and railroaders came in to fill the northwestern Colorado lands.

#### 5. Settlers and Towns

Whether the work was mining coal at Newcastle or grazing cattle



herds on the Roan Plateau's grasslands, the railroads were needed to get supplies shipped in and products sent out. Construction of the railroads, in turn, provided the impetus for an additional influx of cattlemen and miners.

Due primarily to the nomadic lifestyle the Utes had followed, the land these new settlers found in the Piceance Creek Basin had not altered in character from the time of the Escalante Expedition. Even early in the Trail Herd era, the region was noted as containing good grasslands.

Congress didn't declare the Ute's Colorado lands to be public domain until June 28, 1882, and the Army at Meeker did not permit formal homestead entry until it evacuated the troops more than a year later. However, even in 1879 prospectors had founded the settlement of Carbonate in the Flattops north of present Glenwood Springs. They were well aware it was illegal as their first building was a log fort which they named Fort Defiance. Located at 10,783 feet, Carbonate drew its name from the surface deposits of lead carbonate. These were thought to be a sure sign of the same rich silver deposits that had been found at Leadville just two years earlier. No large strikes of precious metals were ever made, however, and Carbonate was soon abandoned. Its role as Garfield County's major town was quickly taken by Glenwood Springs located in the valley to the south along the Colorado River. To the west of Glenwood Springs is Newcastle, which was of primary importance as a coal mining town. Newcastle was located at the head of the Coal Ridge hogback. It was the northernmost of a string of coal camps including Cardiff, Marion, South Canyon, Spring Gulch and Sunlight.

During the Trail Herd era, the Piceance Creek Basin became a major source of beef supply to these booming coal mining towns and enjoyed brief importance as the most direct access route for livestock drives from Rio Blanco County to the slaughter houses of Leadville and Aspen. The cross-basin drives later ended with completion of a road north from Rifle to Meeker. Both routes, however, were far shorter and less difficult than the former 160 mile cattle driveway from Meeker to Rawlins, Wyoming, which during the mining boom caused Leadville and Aspen to pay consistently higher prices for beef than did the Omaha and Chicago stockyards. The opening of the basin to the frenzied trail herds officially began with the withdrawal of the Army troops from Meeker in September, 1883. Rangely, Meeker and Rifle soon prospered as ranch supply towns.

The present town site of Meeker is where General Wesley Merritt, Commander of the Army relief expedition, hurriedly built a military camp after Major Thornburg's defeat. Laid out as a typical Army presidio, it had nine adobe barracks on the south side of its parade ground (now Court House Square) and the officers' quarters on the north. These buildings,

several of which are still in use, were auctioned off to local townspeople for only a few hundred dollars when the Army withdrew. Meeker was the first incorporated town in northwestern Colorado and remained so for close to two decades after its official founding in 1885.

Small amounts of coal were also mined nearby and lime was processed in kilns for use in brick and plaster construction. Meeker served as the banking and credit center for all the range country between Grand Junction and Rawlins. Perhaps one indication of Meeker's early prominence was that in October, 1896, three robbers thought to be part of the Butch Cassidy gang held up the town bank. Townspeople shot the trio dead in the streets as they tried to make a getaway with \$1,600 in cash.

Meeker's commerce was augmented considerably by tourist income which was magnetized by President Theodore Roosevelt's nationally publicized hunting trips into the Flattops. The area had also gained social prestige even earlier when titled English gentry during extended trips to the area formed several local polo teams.

Ute trade also continued to be substantial, and their deerskins were long a major item for the trading posts at both Meeker and Rangely. Though the Indians were formally confined to their Utah reservation, many bands kept permanent camps in the western part of Colorado.

To the west of Meeker was White River City at the confluence of the White River and Piceance Creek. Never formally organized and scarcely more than platted, it consisted of 8 to 10 primitive buildings that eventually were left to rot in the early 1900's. John Hugus had founded it in 1878 while still the post trader at Fort Steele, near Rawlins, Wyoming. Hugus anticipated the routing of the Colorado Midland Railroad from Rifle up Piceance Creek enroute to Salt Lake City. Railroad survey parties did reach his town, but the line was never built beyond Newcastle. Its standard gauge was adapted to the DRG&W narrow gauge at Newcastle, with three rails being used for joint service along the Colorado River into Grand Junction, where the Midland ended in bankruptcy. When the Hugus business was moved to Meeker, White River City was abandoned.

At what is now Rangely, a trading post was established shortly after Congress ratified the Ute Treaty of 1880, nearly a year before the Indians' removal in September, 1881. Under terms of this treaty, the Utes thought they were to be permitted continued use of their traditional hunting grounds in Colorado. In 1895, however, the Supreme Court ruled that Indians off their reservations were subject to state laws and by this time all hunting in Colorado was licensed. Even so, with Rangely so close to the Uintah Reservation boundary, the general store continued to enjoy a thriving Ute trade for many more years. After the Utes were finally confined to their Utah reservation, the trading post became a neighborhood ranch supply center, primarily because of its convenient location at the confluence of Douglas Creek and White River.

About 22 miles south of Meeker is the Rio Blanco Store, situated

at the intersection of Piceance Creek and the Government Road (now State Highway #13) from Meeker to Rifle. Rio Blanco was apparently started by the Harp brothers of Meeker as a stop for their freight and stage service. They also upgraded the primitive north-south trail to a road and built a series of bridges. Eventually the state took over maintenance and improvement of the route.

The town of Rifle, with its road network to the north, east and west, was similar to Glenwood Springs in being a hub-town, and was locally known as a "Saturday night town". Rifle's trade area extended north into Rio Blanco County as well as to the fruitland mesas lying to the south in the fertile valleys under the Mamm Peaks.

#### 6. The Interaction of the Railroads with Mining and Trail Herding

To the west of Rifle, along the valley formed by the Colorado River, 2,000 feet below the rugged cliffs of the Roan Plateau on the southern edge of the Piceance Creek Basin, are the two small towns of Grand Valley and DeBeque. Originally established as another range livestock center in 1882, Grand Valley aimed from its early beginnings at diversification through orchards and vegetable crops. Those people who settled on Parachute Creek north of the Colorado River and south of Battlement Mesa had several advantages over those who settled higher up the Colorado River. Being lower in elevation, they enjoyed milder winters and longer growing seasons and were better sheltered from storms, particularly in winter. In addition, since at least 1890 when The Parachute Mining District was formally organized by local settlers and possibly as early as the 1880's, Grand Valley had also been noted as the center of the Piceance Basin's oil shale interest.

Six years after Dr. W. A. E. DeBeque located his ranch headquarters at the mouth of Roan Creek in 1883, the town site of DeBeque was platted by the Curtis Town and Land Company. The platting came shortly after the arrival of construction crews building the Denver, Rio Grande and Western Railroad through to Grand Junction. DeBeque was incorporated as a town the following year.

One small sidelight is that Rio Blanco County itself didn't come into existence until 1889. Until that time, the entire area had been part of Garfield County, with the county seat at Glenwood Springs.

Railroad construction was a key factor in town development all over northwestern Colorado. But it was mining which drew the railroads and their survey teams westward at breakneck speed. The main transcontinental railroads would have been built sooner or later but the mining era vastly accelerated construction of the major lines as well as numerous spur lines. The Union Pacific loading pens at Rawlins, Wyoming, were directly significant to the Piceance Creek Basin in opening the Chicago and other Midwest stockyards to western range beef. During the height of the Trail Herd Era, the Denver, Rio Grande and Western became even more important in the region's history by opening a large and easily accessible market to the south. The commercial impact of railroad development

on the territories adjacent to the right-of-way was especially swift, and completion of track to Newcastle briefly provided an initial economic outlet for some Rio Blanco County livestock. Then the Denver, Rio Grande and Western's entry into Rifle, coupled with the opening of the Government Road north to Meeker, accelerated the numbers of shipments and also shifted the route the livestock would take to one running directly through the Piceance Creek Basin.

The railroads not only fed on coal but shipped it as well. When the Newcastle area's high quality metallurgical coke became important for fueling mine smelters and the mills at Colorado Fuel and Iron in Pueblo, hundreds of beehive coke ovens were quickly erected at Cardiff, Coal Basin, Marion, Redstone, Spring Gulch and Sunlight. Town growth throughout the area continued to hinge primarily on the relative ease of access to railroads until an all-weather network of vehicular roads developed - primarily in the 1920's.

Long before the Roaring 20's had any impact on the Piceance Creek Basin, however, the vast trail herds of grass-fed cattle had left their mark. As an example of the size of the impact, records show that a cattleman named Jim Rector took charge of the combined operations of three Trail Herds in 1888, totaling 23,000 head. They grazed from the Utah state border on the west to as far east as the top of the Book Cliffs at Rifle. In one of its better years, Rector reported his operation branded 10,000 calves. Each brought \$1 at Rifle, the nearest railroad shipping point. A roundup might involve as many as 60 cowboys, over a month or more, and literally cover tens of thousands of square miles. The cattle would be driven in six or seven separate herds to the railhead. During the same period a man named R. G. Peters and his partner, a Mr. Ransey from Manistee, Michigan, financed the purchase of some 80,000 head of cattle for finishing in the Piceance Creek Basin. And the English Cattle Company, a syndicate formed by E. S. R. Sanderson in London, began with 3,000 head of cattle trailed-in from Texas and nurtured the herd to about 9,000 head by 1896. The cattle originally were trailed-in in great numbers starting in 1884, coming not only from Texas, but also Arizona, the plains of Eastern Colorado, the Laramie Plain of Wyoming and by the thousands, from Utah. They were summered on the high Roan Plateau and Book Cliffs at the southern edge of the Piceance Creek Basin, and then rounded up in the fall along Piceance Creek for the drives to Rifle.

In addition to the vast numbers of cattle, extensive Indian horse herds were left behind in Colorado at the time of the Ute Removal in 1881 and thousands of horses also freely roamed the basin, competing with the cattle, and later sheep as well, for the grass. While modern domestic livestock use of the Piceance Basin is controlled, overgrazing by cattle and horses during the Trail Herd era apparently saw a 400 to 500 percent range overloading. While initially a steer-finishing operation, the Trail Herd era began a shift to local cattle breeding and the start of hay ranches. The hay ranches were started following nearly 75 percent death loss from the blizzards of 1889-1890. Another severe winter in 1908-1909 reinforced the realization that supplies of feed had to be maintained locally to supply the cattle when the open range was



frozen or afflicted with drought. Homesteading and farming thus became additional major impacts on the lands in the basin.

## 7. Homesteading

Homestead filing for ranch headquarter sites in well-watered valleys followed the arrival of the first cattle herds, especially after the catastrophic blizzards. Over-expansion soon developed in dry-land farming, though many of the homesteads failed after World War I when both a farm price depression and the beginning of a drought cycle hit. Those twin disasters led to widespread cropland abandonment. The initial farming attempts had been accelerated by a cycle of wet years and the availability of the original subsoil moisture, which occurred immediately after the sod was turned under. As the wet years ended, the plowed land rapidly reverted to seasonal range use, largely by sheep.

Each dryland farm customarily also had work horses and a few milk cows, which were turned out to graze on the adjacent public domain. Although the numbers rarely exceeded 20 head per farm, the total impact on the Piceance Creek Basin resulted in additional overgrazing. The development of irrigated hayland in the sheltered valley bottoms led to the introduction of barbed wire fencing to the Piceance Creek Basin, and increasing restrictions on access to public domain. The end result was that overgrazing was intensified thus causing natural grass cover to dwindle. In addition, range sheep, moving from winter desert range in Utah, first to Rangely and then further east enroute to high country pastures, increased grazing pressure on the area. The passage of the Rees-Oldland Act of 1929 was an initial attempt to establish State control over Federal land. Eventually the Taylor Grazing Act of 1934 sought to correct the Trail Herd era's major impacts. The Taylor Grazing Act ended free homesteading and uncontrolled access to the public domain. It also established the Bureau of Land Management.

## 8. Natural Resource Development

Oil and gas discoveries near Rangely beginning in 1919 again accelerated the Piceance Creek Basin's growth. At the same time, coal production, always important for local needs, began expanding from the mines such as those located 12 miles east of Meeker in Coal Creek. The growth of the Rangely oil and gas field was slow but steady and by 1940 Rangely had the largest payroll of any town in Rio Blanco County. This continued to increase into the 1970's through new oil and gas well discoveries, even though production at the older wells diminished. Continuing population growth also led to the establishment of the first community college in northwest Colorado, founded at Rangely in 1947.

## 9. Oil Shale

There were sporadic attempts even in the late 19th century to exploit the Piceance Creek Basin's oil shale deposits commercially, but none

succeeded. The Utes had called it "the rock that burns" after seeing sections of shale outcrops in the Roan and Book Cliffs flame and smolder when struck by lightning. And some early trappers and settlers tossed chunks onto their campfires as an added fuel. Local people at Grand Valley called it "rubber rock", probably because a thin piece of oil shale can be bent slightly or perhaps because a rich piece tends to bubble and melt like rubber when burned.

The first oil shale retort constructed in the Grand Valley region apparently was the Bailey retort, built in the early 1890's by T. E. Bailey and some associates. It was followed by construction of the Henderson retort in 1917. The publication of a detailed oil shale survey by the United States Geological Survey in 1916 had given a big boost to interest in oil shale. The publicity over the report led to the filing of thousands of claims and within little more than a decade some 50,000 acres in placer claims had been filed, along with 12,000 acres in unpatented claims. On March 4, 1925, Congress appropriated \$90,000 for shale research, including construction of a retort north of the Colorado River in the cliffs near Rulison where the shale outcrops. It operated until 1929. One early private shale venture started in 1930 when the Index Oil Shale Company began a 100 ton-per-day operation at Mt. Index, located at the confluence of Roan and Clear Creeks north of DeBeque. The Index plant lasted six years before being shut down in the face of insurmountable economic problems.

Other than the filing of claims and some small production efforts, there weren't any major attempts at large-scale shale research until the Anvil Points Oil Shale Experiment Station was built by the U.S. Bureau of Mines in successive stages, starting in 1944. By 1951, the Bureau was operating a gas combustion pilot plant capable of handling six tons per day. The capacity was expanded to 25 tons a short time later and then to 150 tons by 1953 before operational problems forced a cutback to 25 tons per day. Some tests were also made to refine the crude shale oil into gasoline and other petroleum products before the government closed its operations at Anvil Points in 1956. After repeated closings and reopenings, the facility was reactivated several years ago for a series of private pilot experiments.

Since World War II there have also been several other major testing programs by industry on private shale lands including two semi-works operations in Parachute Creek Canyon run by Union Oil Company and Colony Development Operation, and an in situ experiment near DeBeque conducted by a combined shale and nacholite operation and carried out by Superior Oil Company on the Piceance Creek Basin's northern fringe near Meeker. In addition, the basin is the site of the Federal Oil Shale Lease Tracts C-a, southeast of Rangely, and C-b, southwest of Meeker.

Twice in the past decade the Atomic Energy Commission has attempted to increase natural gas flow in the Piceance Creek Basin's tight underground rock formations by means of nuclear explosions. The experiments took place in September of 1969 at Project Rulison, south of Rifle, and in May of 1973 at Project Rio Blanco, on Piceance Creek. The passage

of a referendum by Colorado's voters in November of 1974, stipulating that any further nuclear experiments must be subject to a statewide vote, has made it doubtful that any additional similar gas experiments will be attempted in the near future in the state.

#### 10. Land Use Controls

The development of land use controls in northwestern Colorado in this century has been a gradual process. The major agencies responsible for the management of lands both within and adjacent to the Piceance Creek Basin have been the U.S. Forest Service, the Interior Department's Bureau of Land Management, the various Soil Conservation districts, and the Soil Conservation Service of the U.S. Agriculture Department. Although there are no national forest lands in the Piceance Creek Basin itself, the existence of the White River National Forest to the east has actually had a major impact on the basin's lands. The White River National Forest, named in 1890, was the second National Forest established in the country. Initially, it was merely a Forest Reserve with no intensive management since the Forest Service was not established until Theodore Roosevelt's administration. Because of his numerous hunting trips on the Flattops and his use of Glenwood Springs as a summer White House, Roosevelt had an intense interest in the White River country. As a result, the White River National Forest became an early focus for U.S.F.S. management planning, with Meeker as its headquarters.

The Forest Service published its regulations following World War I, but establishment of land use control in the field did not follow immediately. Local resistance was often extreme and the implementation process was slow, inching from ranger district to ranger district. In addition, lawsuits contesting the new management policies did not complete their journey through the federal courts for many more years. Faced in the interim with more applicants for summer grazing permits than its own range evaluation studies could satisfy (in terms of both erosion control and sustained forage yield), the Forest Service began seeking an impartial formula to determine acceptable use. From this effort came a decision to issue permits only for the three months of summer. In order to avoid contributing to land abuse outside the forest, the Forest Service began requiring applicants to prove they could also maintain their livestock during the remaining nine months by demonstrating availability of hay and supplemental grazing lands. This, in effect, gave the government agency a strong position in control of lands outside the national forests. The implementation of Forest Service controls also resulted in the virtual end of the aggressive competition for range stock water that had characterized the heyday of the trail herds. Historically, control of stock water meant control of the adjacent public domain since cattle will rarely graze more than several miles from water. Consequently, additional overgrazing occurred in the immediate area further damaging the grass cover.

A second major factor in the advent of controlled land use in the Piceance Creek Basin was the passage of the Taylor Grazing Act of 1934. This action not only ended most homesteading, but also created grazing

districts and, within them, grazing allotments with specific boundaries. Like the Forest Service land use controls, the Taylor Grazing Act was implemented gradually. Although numerous attempts had been made to abate the high-cost nuisance of overgrazing and to initiate controls over long-abused public domain, the changes required both local understanding and local support.

A third major factor in land use control in the region has been the role of the Soil Conservation Districts and the U.S. Soil Conservation Service. Although privately-owned land within the Piceance Creek Basin is interwoven among many categories of federal land (controlled by the Forest Service, Bureau of Land Management, Bureau of Reclamation, etc.) state and county lands, the private acreage was long exempt from public agency land use controls. Control of private lands began in 1938 with establishment of the first Soil Conservation District in Colorado, namely, the Great Divide district in Moffat County. Since then, seven Soil Conservation Districts have been organized within the Piceance Creek Basin blanketing the entire oil shale area. In addition to their broad geographic responsibility, the Soil Conservation Districts have also offered avenues for local participation in policy formulation by including local persons in their management.





---

CHAPTER III

LAND USE

---



A.    Introduction and Summary

Taken up in this chapter is the kind and extent of land uses in Garfield, Mesa and Rio Blanco counties. Considered land uses are primarily agriculture, natural resources, recreation and community development.

The total land area of Garfield, Mesa and Rio Blanco counties is 9,563 square miles. A recent Council of Governments study described the geology of the area as follows:

The three county area is part of the Colorado Plateau and is characterized as an uplifted area displaying either gently folded or nearly horizontal rocky layers sliced by streams, many of which are deeply entrenched in canyons. Examples of this geologic condition include Roan and Book Cliffs which rise as much as 4,000 feet above their surrounding lowlands and the spectacular plateau of the Grand Mesa.

The three county region is part of four major drainage basins; the Colorado River, White River, Yampa River and Delores River Basins. Major tributaries of these streams include, Yellow Creek, Rifle Creek, Piceance Creek, Parachute Creek, Roan Creek, the Gunnison River, and the Roaring Fork River. Other major bodies of water consist primarily of the man-made reservoirs in the region. Vega, Rifle Gap, and Harvey Gap Reservoirs, provide potable water reserves as well as recreational facilities for residents of the region.<sup>1</sup>

The primary land use in the area is grazing followed by timber/grazing. These two activities constitute about 90 percent of all existing land uses.

The three county area surrounds the Piceance Creek Basin which according to the recent Council of Government's study contain an estimated 480 billion barrels of synthetic crude oil. Oil shale deposits are found in 29 percent of the total three county land area. The area has considerable space available for recreation. About 458,000 acres of public and private land not including the bulk of the National Forests are estimated to be recreation lands.

The communities of the area occupy less than 1 percent of the total land in the three counties. These communities have developed primarily in areas with level land, along major transportation routes and close to

---

1. Colorado West Area Council of Governments, September, 1974, pgs. 3-4

water. Zoning, planning and regulatory measures vary considerably from town to town in the counties. It can fairly be said that further steps are necessary to provide adequate preparation for growth in all of the towns, although some are much further along in this process than others.

This chapter discusses at greater length the above points. It should be noted that land use has not been greatly restricted or controlled historically in the three county area because the growth that did occur presented no major conflicts over land use patterns such as have occurred in major urban areas of the country.

## B. Agriculture

Agriculture, primarily livestock grazing, is the traditional land use in Colorado's Piceance Creek basin and it is of historic importance to the economy of Garfield, Mesa and Rio Blanco counties. The total land area of the three counties is 9,563 square miles with 9,354 of these devoted to agriculture. (See Table III-1). About 200 square miles are classified as wilderness area and about 15 square miles are taken up by urban settlements. Even in Mesa County, which has the largest urban population of the three, Grand Junction and all other municipalities in the county constitute less than a quarter of one percent of the land area.

The rural character of the three county region is shown in more detail in Table III-2 which lists the number of square miles of land in use by category (irrigated crop land, dry crop land, grazing, timber grazing, timber, wilderness and urban) for each county. The breakdown of these classifications is shown by percentage in Table III-3. Grazing and timber grazing account for the use of over 8,500 square miles (89.49%) of the total. Figure III-1 shows the varied land uses, with the exception of urban lands, in the region. Although the economic importance of agriculture to the three county region is declining, the value of farm products sold still contributes significantly to the economy (See Table III-4).

Most of the lands in the more than 800,000 acre Piceance Creek Basin, especially in Rio Blanco County, are in the public domain and are included in two Bureau of Land Management Grazing Districts administered under the Taylor Grazing Act (See Table III-5). About 60,000 authorized animal unit months<sup>1</sup> of forage use are distributed among 45 permittees.

The extent of crop land in the three county area is limited primarily by terrain and access to water although climatic conditions also influence agricultural production. For example, although the region has an average growing season of 137 days, Mesa County's growing season is 188 days, while Rio Blanco County has a 90 day growing season. Annual snowfall and rainfall also varies greatly in the three counties. Rio Blanco County receives around 91 inches of snow and 20 inches of

---

1. One AUM is adequate forage to support a steer for one month.

Table III-1

AGRICULTURAL LAND AREAS IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Square Miles)

	Rio Blanco	Garfield	Mesa	Total
Agricultural Lands	3,220	2,840	3,294	9,354

Source: Adapted from THK Associates, 1973, page 4.

Table III-2

LAND USE BY CATEGORY IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Square Miles)

	Rio Blanco	Garfield	Mesa	TOTAL
Grazing	2,555	1,955	1,807	6,317
Timber-grazing	376	645	1,220	2,241
Timber	153	104	24	281
Irrigated cropland	108	125	239	472
Dry crop land	29	11	3	43
Wilderness	42	153	0	195
Urban settlement	<u>1</u>	<u>4</u>	<u>9</u>	<u>14</u>
Totals	3,263 <sup>(a)</sup>	2,997	3,303 <sup>(a)</sup>	9,563

Notes: (a) Numbers have been rounded and do not add to the actual total.

Source: Adapted from THK Associates, 1973, page 4b.

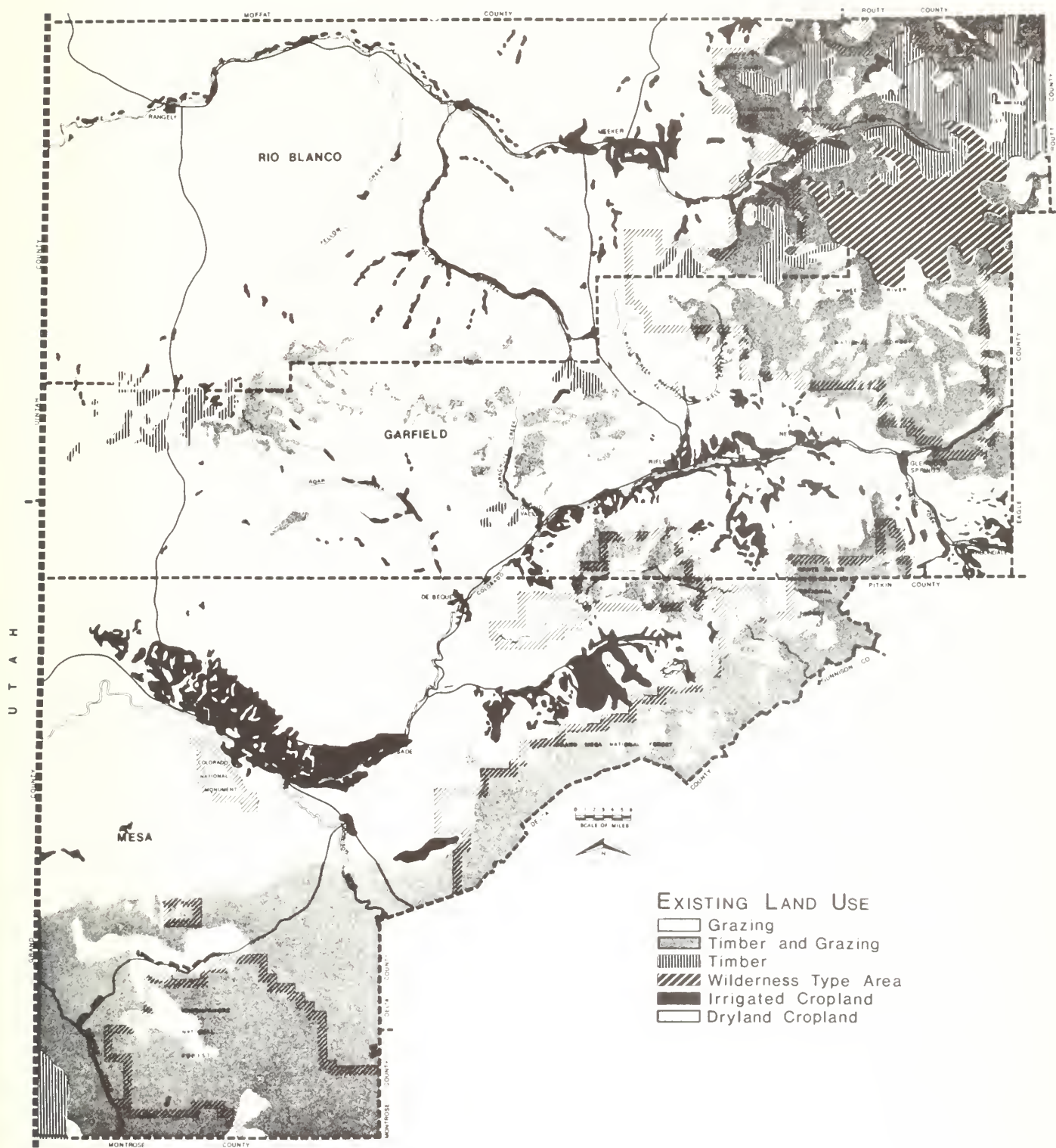
Table III-3  
LAND USE BY CATEGORY IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Percentages)

	Rio Blanco	Garfield	Mesa	All 3 Counties
Grazing	78.30%	65.43%	54.70%	66.08%
Timber-grazing	11.50	21.50	36.90	23.41
Timber	4.67	3.55	0.74	2.94
Irrigated cropland	3.30	4.20	7.30	4.93
Dry crop land	0.90	0.04	0.08	0.45
Wilderness	1.30	5.15	0.00	2.03
Urban settlement	<u>0.03</u>	<u>0.13</u>	<u>0.28</u>	<u>0.16</u>
Totals	100.00	100.00	100.00	100.00

Source: Adapted from THK Associates, 1973, page 4b.



FIGURE III-1  
EXISTING LAND USE IN THE REGION



Source: Colorado West Area Council of Governments, Sept. 1974

Table III-4

ECONOMIC INDICATORS FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Millions of Dollars, Unless Otherwise Indicated)

County	Retail Trade (a) <sup>1</sup>		Services (a) <sup>1</sup>		Acreage farmed (thousand)	Agriculture (b) <sup>2</sup>	
	Total establish- ments	All sales	Total establish- ments	All receipts		Total commercial farms	Value of farm products sold
Garfield	200	27.7	174	4.1	457	309	6.7
Mesa	525	81.5	418	12.2	524	812	18.1
Rio Blanco	<u>57</u>	<u>5.6</u>	<u>66</u>	<u>1.6</u>	<u>557</u>	<u>149</u>	<u>5.6</u>
Total	782	114.8	658	17.9	1,538	1,270	30.4

Notes: (a) 1967  
(b) 1969

Sources: 1. U.S. Bureau of the Census, Census of Business, 1967, II, and, U.S. Bureau of the Census, Census of Business, 1967, V.  
2. U.S. Bureau of the Census, Census of Agriculture, 1969, I.

Table III-5

LAND AREA BY OWNERSHIP IN TWO BUREAU OF LAND MANAGEMENT  
PLANNING UNITS

BLM Planning Unit	Federal (percent)	Public Land (acres)	State (acres)	Private (acres)	Total (acres)
Piceance Basin	61	264,580	11,526	97,780	373,886
Yellow Creek	<u>79</u>	<u>343,989</u>	<u>18,823</u>	<u>68,719</u>	<u>431,531</u>
Totals	70	608,569	30,349	166,499	805,417

Source: U.S. Department of the Interior, 1973, I, page II-212.

rainfall on a yearly average. In contrast, Mesa County has an approximate average snowfall of 27 inches and a rainfall of 9 inches.<sup>1</sup> The amount of irrigated and dry crop land in each county rated accordingly with its quality is shown in Table III-6. The crops grown are usually winter wheat and hay. Some dry crop land is also planted in temporary or permanent pasture. There is also substantial fruit-growing activity in the river valley lands surrounding Palisade.

While the traditional, dominant agricultural land use is grazing, both irrigated and dry crop land also are found in each of the counties. Although many of the smaller stream valleys support crop raising on a limited basis, the best irrigated agricultural land lies in Mesa County along the Colorado River from Palisade on the east to Mack on the west. This area encompasses approximately 200 square miles, within which Grand Junction occupies 7 square miles and Fruita 1.5 square miles.

### C. Natural Resources

#### 1. Oil Shale

The most extensive high grade oil shale deposits in the United States are located in the 25,000 square mile Green River Formation in Colorado Utah and Wyoming, with the richest section in the Piceance Creek Basin. The higher grade deposits total 150 billion barrels of recoverable oil in strata varying from 10 to 2,000 feet thick with overburdens from zero to 1,600 feet. Oil shale deposits are found in 29 percent of the total three county land area.<sup>2</sup> These deposits average 30 or more gallons of oil per ton richness. The total reserves of the entire Green River Formation reach 600 billion barrels recoverable with moderate advances in technology. In the center of the Piceance Creek Basin, the oil shale is 2,000 feet thick with some individual beds containing up to 80 gallons per ton. Total in-place reserves, including shale zones of 15 feet or more, averaging at least 15 gallons of oil per ton, are estimated to be 1.25 trillion barrels.

Eighty percent of Colorado's high grade deposits are administered by the Department of the Interior, including public lands and some private lands whose minerals rights are reserved to the government. In Rio Blanco County, for instance, the Federal government owns nearly three-quarters of the county's 3,263 square miles. The majority of the privately owned oil shale is concentrated in the southern portion of the Piceance Creek Basin. Along the Parachute Creek Valley, where the richest deposits in the southern portion of the basin are located, nearly 90 percent of the land or mineral rights, with extensive restrictions on surface area, are owned by oil companies. These holdings are generally leased to ranchers for grazing purposes.

---

1. Colorado West Area Council of Governments, September, 1974, pgs. 3-4

2. Colorado West Area Council of Governments, September, 1974, pgs. 6-11

Table III-6  
CROPLAND QUALITY RATINGS BY SQUARE MILES IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES

	Good	<u>Irrigated Crop Land</u> Fair	Poor	Good	<u>Dry Crop Land</u> Fair	Poor
Rio Blanco	—	62	—	—	51	29
Garfield	—	126	54	—	27	0.3
Mesa	203	44	78	—	—	—

Source: Adapted from THK Associates, 1973, page 13.

At one time or another over the past century, placer claims have been filed by individuals or companies on much of the Federal shale land. Efforts to clarify the validity of these claims have been pursued both by the Department of the Interior and the claimants. Since 1965, ownership of land and mineral rights on numerous claims has been resolved. The status of land ownership as of 1968 is summarized in Tables III-7, 8, 9.

Historically, only a few pilot plant operations have been established for mining and processing oil shale in the region. Publication of a 1916 U.S.G.S. study on oil shale gave impetus to the filing of placer claims on much of the land and, by 1928, claims had been filed on over 50,000 acres.

In the 1940's and 1950's, the Bureau of Mines built an experimental oil shale facility at Anvil Points. After many years of inactivity, it was recently re-opened by a group of private companies to test the Paraho retorting process. Other shale developments currently in the Piceance Creek Basin include the private operations of Colony, Union, Occidental and Superior and the Federal Lease Tracts C-a and C-b.

## 2. Coal

In addition to oil shale, the other major mineral resource in the three county region is coal. Table III-10 shows the number of square miles of oil shale and coal deposits for each county. The Piceance Creek Basin also contains significant deposits of nahcolite, dawsonite, petroleum and natural gas. No commercial concentrations of uranium, base or precious metals, other than some gypsum deposits in Garfield County, have been found in the region.

The coal fields in the area are part of the Uinta Formation which generally extends west from the Piceance Creek Basin into Utah. Six identifiable fields are located in the Uinta Formation: Lower White River, Danforth Hills, Grand Hogback, Book Cliffs, Grand Mesa and Carbondale fields.

Coal beds of present or future commercial value (minimum 15-30 inch thickness) are exposed near some of the oil shale deposits. Beds of lesser thickness or beds too deeply buried for commercial development lie even more extensively under much of the shale land. The "indicated" coal reserves in or adjacent to the oil shale region of Colorado may total as much as 2-3 billion tons according to the Department of the Interior. Distribution of coal deposits in the region are shown in Figure III-2.

## 3. Other Minerals

Near the center of the Piceance Creek Basin, the minerals dawsonite (alumina) and nahcolite (soda ash) are intermixed with oil shale. The dawsonite is finely disseminated in thick shale beds. Most of the dawsonite is located in the lower oil shale zone under Rio Blanco County,



Table III-7  
FEDERAL OIL SHALE LANDS IN COLORADO  
(Including Clear and Clouded Titles)

Item	Land Area
Quantity of land:	
Total of oil shale land, thousand acres	1,800
Federal oil shale land, thousand acres <sup>(a)</sup>	1,420
Percent Federal land (of total)	79
Quality of Federal oil shale lands:	
Low grade or unappraised:	
Acres, thousand	570
At least 15 feet of 15 - 25 gallons per ton shale:	
Acres, thousand	300
At least 10 feet of over 25 gallons per ton shale:	
Acres, thousand	
Quantity of shale oil in place -- Federal lands <sup>(b)</sup>	
At least 15 feet of 15 - 25 gallons per ton shale:	
Shale oil, billion barrels	600
At least 10 feet of over 25 gallons per ton shale:	
Shale oil, billion barrels	390
Total:	
Shale oil, billion barrels	990

Notes:     (a) Largely clouded by unpatented mining claims  
              (b) Data include some allocations from unappraised lands

Source:     U.S. Department of the Interior, 1973, I, page II-104.

Table III-8  
NON-FEDERAL OIL SHALE LANDS IN COLORADO  
(Clear Title)<sup>(a)</sup>

Item	Land Area
Quantity of land:	
Total oil shale land, thousand acres	1,800
Private oil shale land, thousand acres	380
Percent private land (of total)	21
Quality of private oil shale lands:	
Low grade or unappraised:	
Acres, thousand	165
At least 15 feet of 15 - 25 gallons per ton shale:	
Acres, thousand	80
At least 10 feet of over 25 gallons per ton shale:	
Acres, thousand	170
Quantity of shale oil in place private lands:	
At least 15 feet of 15 - 25 gallons per ton shale:	
Shale oil, billion barrels	130
At least 10 feet of over 25 gallons per ton shale:	
Shale oil, billion barrels	80
Total:	
Shale oil, billion barrels	210

Notes: (a) Indian and State lands are included in data shown

Source: U.S. Department of the Interior, 1973, I, page II-105.



Table III-9  
FEDERAL OIL SHALE LANDS IN COLORADO  
(Clouded Titles)

Item	Land Area
Quantity of land:	
Total Federal lands, thousand acres	1420
Land with unpatented mining claims:	
Old claims, prior to 1966, thousand acres	400
New claims, 1966, thousand acres	700
Total with claims, thousand acres	1,100
Percent of Federal land with claims	78 (a)
Quality of lands with patented claims:	
Low grade or unappraised:	
Acres, thousand	500
Percent distribution (of total)	14
At least 15 feet of 15 - 25 gallons per ton shale:	
Acres, thousand	200
Percent distribution (of total)	12
At least 10 feet of over 25 gallons per ton shale:	
Acres, thousand	500
Percent distribution (of total)	36
Quantity shale oil in place, unpatented mining claims (b)	
At least 15 feet of 15 - 25 gallons per ton shale:	
Shale oil, billion barrels	500
Percent distribution (of total)	72
At least 10 feet of over 25 gallons per ton shale:	
Shale oil, billion barrels	320
Percent distribution (of total)	82
Total:	
Shale oil, billion barrels	820
Percent distribution (of total)	75

Notes:     (a) Ninety-five percent of lands in Piceance Creek Basin, Colorado, have unpatented mining claims  
            (b) Data includes some allocations from unappraised lands

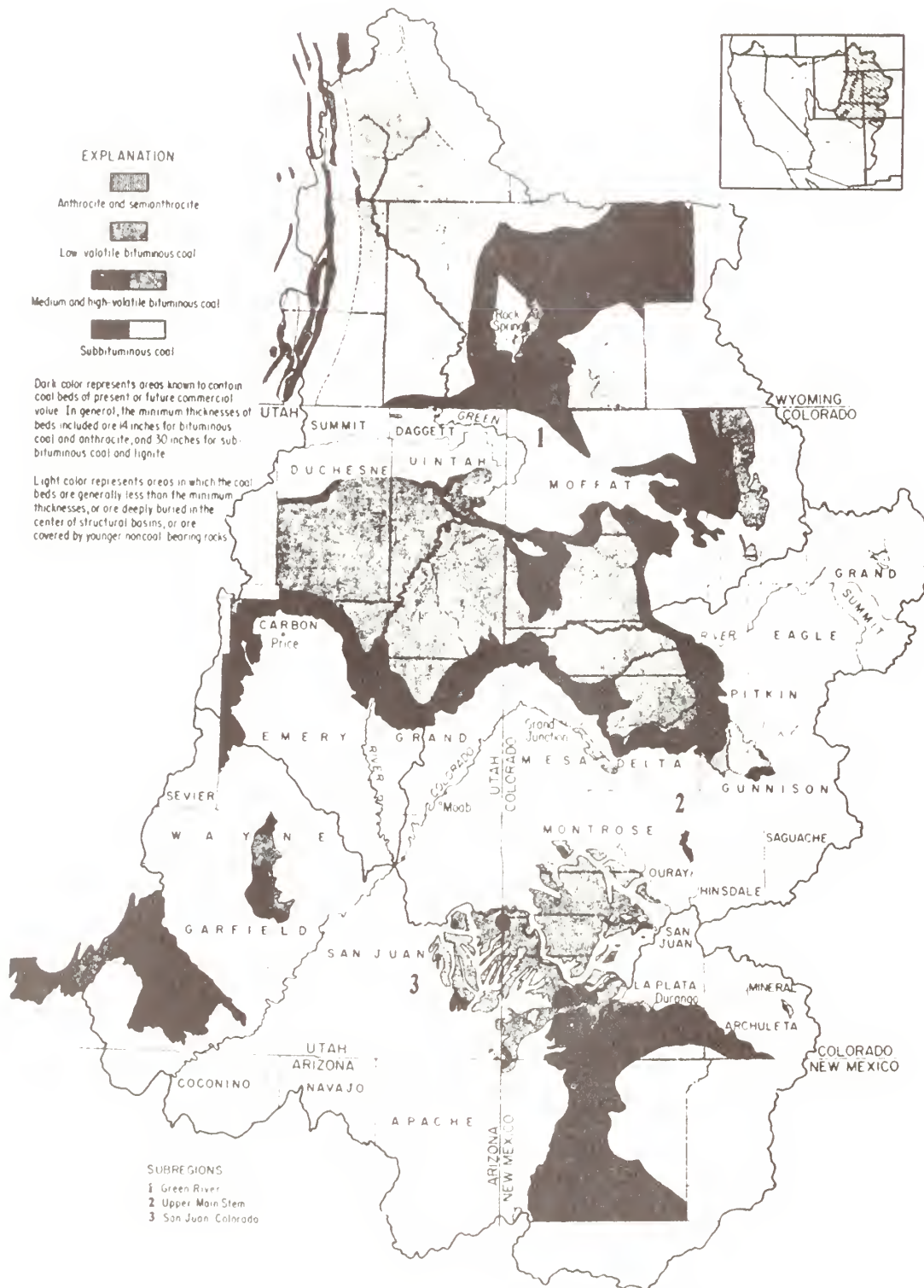
Source:     U.S. Department of the Interior, 1973, I, page II-106.

Table III-10  
OIL SHALE AND COAL DEPOSITS IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Square Miles)

County	Oil Shale Deposits	%	High Grade Oil Shale Deposits	%	Coal Deposits	%	Total Area
Garfield County	886.0	29	777.1	25	1,793.7	59	2,997
Mesa County	365.2	11	92.8	2	1,586.5	48	3,303
Rio Blanco County	<u>1,545.7</u>	<u>47</u>	<u>824.4</u>	<u>25</u>	<u>2,370.2</u>	<u>72</u>	<u>3,263</u>
Total	2,796.5	29	1,694.3	17	5,750.4	60	9,563

Source: Adapted from THK Associates, 1973, page 24.

FIGURE III-2  
COAL DEPOSITS IN THE UPPER COLORADO REGION



Source: U.S. Department of the Interior, 1973, I page II-19

where units of mineable thickness may contain 3 percent by weight of equivalent extractable alumina. Figure III-3 shows the thickness of dawsonite-bearing shales in the Piceance Creek Basin.

Nahcolite, on the other hand, is often found in elliptical pods up to several feet in diameter. As much as 130 million tons of nahcolite per square mile may be present in the center of the Piceance Creek Basin. The thickness of the nahcolite-bearing oil shale in the northern section of the Basin is shown in Figure III-4. Nahcolite is a potential source of soda ash and may also be useful for removal of sulfur from industrial stack gases.

Also shown in Figure III-4 is the location of the sodium chloride mineral, halite, which is interbedded with oil shale in a section approximately 300 feet thick, underlying about 75 square miles in the north central part of the Piceance Creek Basin. Individual halite beds vary from one foot to 30 feet in thickness. Soluble in ground water, much of the halite in the Piceance Creek Basin has been leached from the adjacent rocks. To date, there has been little interest in mining the mineral.

#### 4. Oil and Natural Gas

Oil was discovered near Rangely in 1902, but development of the field was somewhat slow until 1939. Production at Iles Field in Moffat County started in 1925 and jumped to more than a quarter of a million barrels by 1927. Two fields in Rio Blanco County, Weber and Wilson Creek, have also enjoyed large-scale production since the 1940's. Natural gas production associated with the oil fields of the region grew quickly to the point where shipments warranted building pipelines to Salt Lake City to connect with the Pacific-Northwest system.

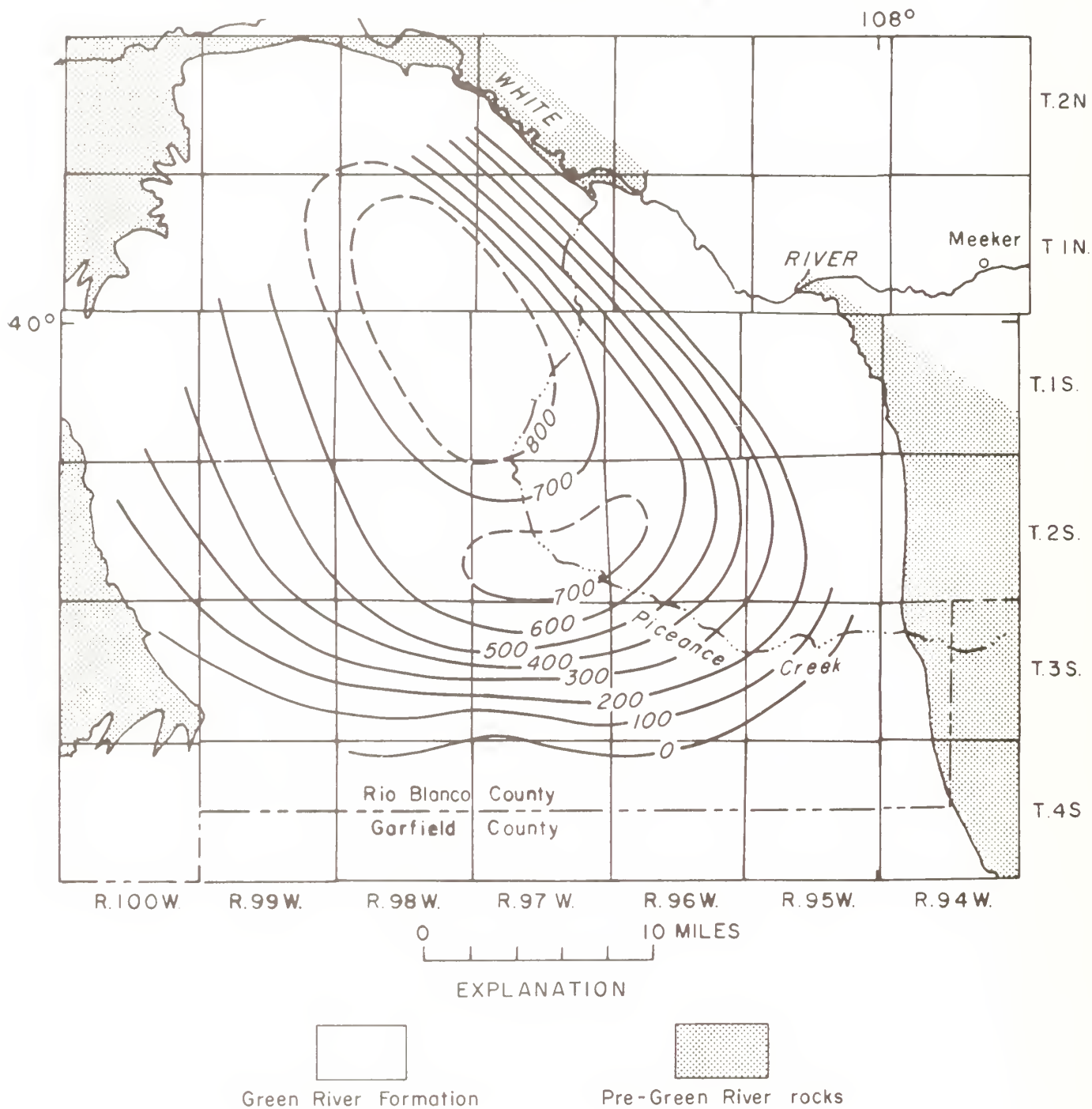
The location of oil and gas fields in the Piceance Creek Basin are shown in Figure III-5. The known crude oil reserves in the three county region are approximately 680 million barrels and geologists estimate that an additional five billion barrels may be present.

Although most of the natural gas production is from the Piceance Dome in the northeastern section of the Piceance Creek Basin, gas bearing sandstones have been encountered in exploration wells in many other sections of the basin. Most wells have been shut-in because of limited production potential. Total natural gas resources, nonetheless, are estimated to be on the order of 85 trillion cubic feet. An additional 300 trillion cubic feet may exist in tight sandstone formations from which the gas is not economically recoverable until special techniques, such as nuclear fracturing, are developed further. Nuclear fracturing has been tested twice in the area, at Project Rulison southwest of Rifle in 1969, and at Project Rio Blanco near the Federal Lease Tract C-b in 1973.

#### D. Recreation

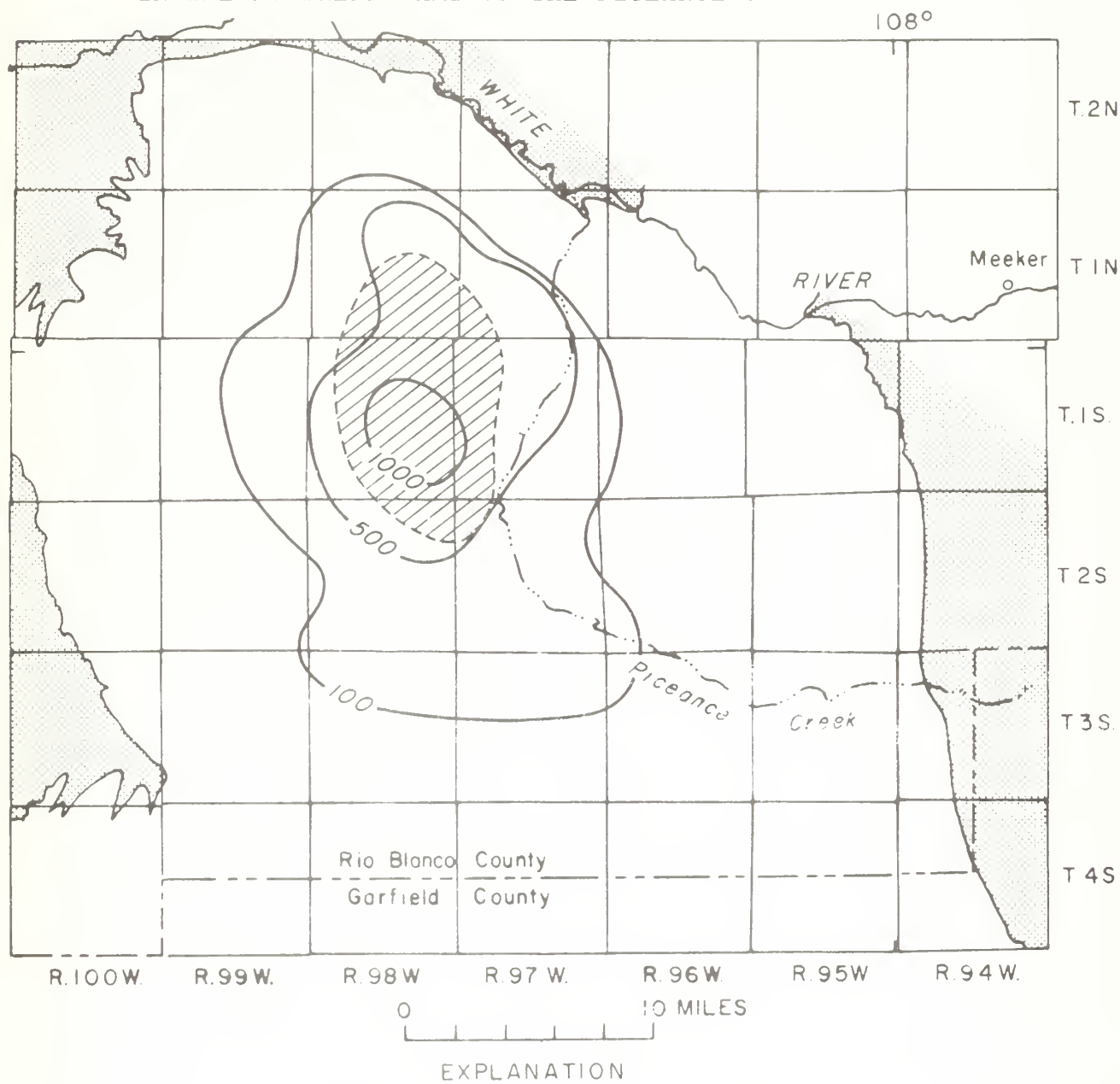
Recreational resources within the region are generally non-site intensive, i.e., rather than being limited to a relatively small number of specified areas, recreational activity is widespread taking advantage

FIGURE III-3  
THICKNESS OF DAWSONITE-BEARING OIL SHALE  
IN THE NORTHERN PART OF THE PICEANCE CREEK BASIN



Source: U.S. Department of the Interior, 1973, I page II-126

FIGURE III-4  
THICKNESS OF NAHCOLITE-BEARING OIL SHALE  
IN THE NORTHERN PART OF THE PICEANCE CREEK BASIN



(The thickness, in feet, of nahcolite-bearing oil shale is shown by contour lines. The distribution of halite bearing rocks is shown by diagonal lines.)

Source: U.S. Department of the Interior, 1973, I page II-125



FIGURE III-5  
OIL AND GAS FIELDS IN THE UPPER COLORADO REGION



Source: U.S. Department of the Interior, 1973, I page II-18



of local natural settings such as lakes, streams, high mountain areas and plateau lands. Major forms of recreation in the region are big game hunting, fishing, sightseeing, camping, hiking and boating. Hunting, specifically for mule deer, is the single most popular activity.

The Piceance Creek Basin constitutes one of Colorado's most important mule deer ranges. The lower elevations of the basin are the principal wintering grounds for the White River Herd believed to be one of the largest migratory deer herds in North America. In recent years the estimated size of the herd has ranged from 30,000 to 60,000 head. During the fall an average of 5,500 persons hunt deer in this area. The harvest has been highest per square mile of any area in Colorado. An average of 4.7 deer per square mile were killed in the 1970 season. The mule deer population has been decreasing since the 1950's, as indicated by meadow counts, but it fluctuates widely from year to year depending on such factors as hunter kill, winter kill, fatality rates, road kill and disease (See Figure III-6). Although deer harvests have generally declined, the Piceance Creek Basin continues to be one of the most prolific deer hunting regions in Colorado. Table III-11 gives statistics on the 1974 deer and elk hunting seasons.

Elk hunting, although not as popular as deer hunting, attracts about 1,000 hunters annually, primarily to the higher elevations of the Roan Plateau. Small game and birds, such as Sage and Blue grouse, Gambel's quail, and ducks are also hunted in some parts of the three county region.

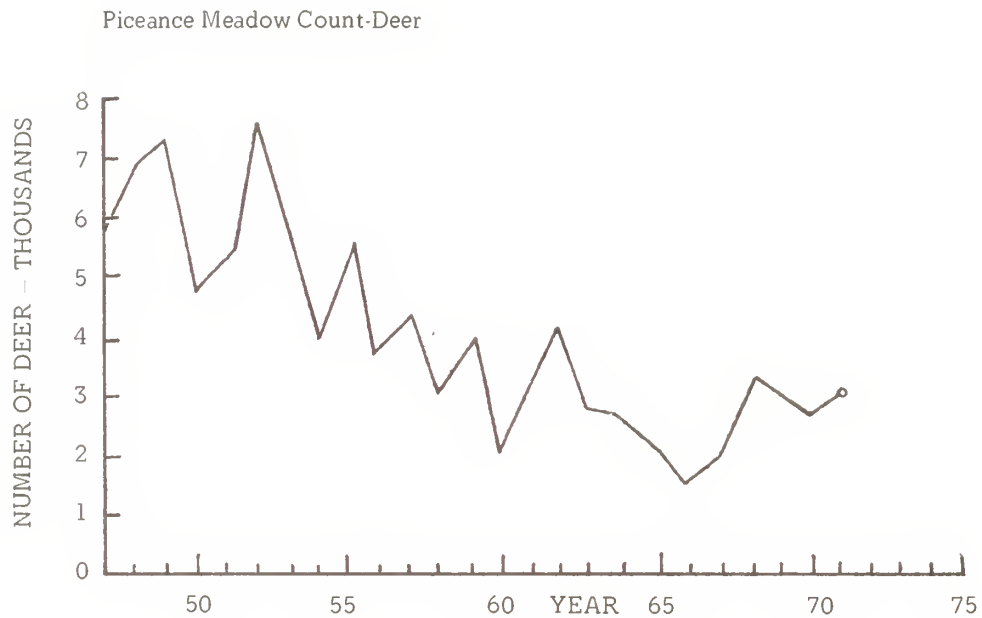
Fishing areas within the region are generally found along the perimeters of the arid Piceance Creek Basin. Many popular sites are found along the White River and the Colorado River and in the larger lakes and reservoirs including Rio Blanco Lake, Pagoda Lake, Skinny Fish Lake and Stillwater Reservoir.

Other important recreational activities are sightseeing, "rock-hounding", camping, hiking, boating and skiing. With the exceptions of "rockhounding" and sightseeing, these other activities are most common in the public lands surrounding the Piceance Creek Basin. The Bureau of Land Management allows camping, hiking, picnicing and rock collecting on all BLM-administered public lands. There are only three developed recreation areas in the region: Gypsum, Miracle Rock and Mud Springs recreation sites.

Intensive recreational use in the region is made of campsites, national monuments, state parks and recreation areas. The White River National Forest contains 42 campgrounds. Six campgrounds may be reached from Colorado Highway 132 east of Meeker: South Fork, North Fork, Himes Peak, Marvine, East Marvine and Trappers Lake. U.S. Highways 6 and 24 near Rifle provide access to three campgrounds: Little Box Canyon, Three Forks and Meadow Creek Lake. The National Park Service maintains 15 campgrounds in the Dinosaur National Monument. Two of these campgrounds are modern, three are primitive and ten are accessible only by boat.

Private campgrounds are also available. The Glenwood Springs area

FIGURE III-6  
PICEANCE MEADOW DEER COUNT  
(1953 - 1972)



Source: Sandfort 1973, page 9

Table III-11

HUNTING ACTIVITY IN PICEANCE BASIN MANAGEMENT UNIT NUMBER 22 (a)  
(1974)

---

Regular Deer Hunters - Rifle - Buck only

Harvest: 1982

Hunters: 5417

Recreational Days: 19,260

Residents of state: 1846 (1st choice)

Non-residents: 2771 (1st choice)

Archery Deer Hunters

Harvest: 19

Hunters: 211

Recreational Days: 1037

Residents of state: 48 (1st choice)

Non-residents: 111 (1st choice)

Regular Elk Hunters - Rifle - Bull & Cow limited

Harvest: 209

Hunters: 950

Recreational Days: 4205

Residents of state: 628 (1st choice)

Non-residents: 278 (1st choice)

Archery Elk Hunters

Harvest: 5

Hunters: 31

Recreational Days: 143

Residents: 0

Non-residents: 26 (1st choice)

---

Notes: (a) These statistics describe licenses sold and hunting activity in the Piceance basin Management Unit Number 22 for 1974. The table gives the harvest, i.e., the number of deer or elk shot, the number of hunters, the number of recreational days the area was used and the number of resident and non-resident licenses issued on a first unit choice.

Source: (a) Colorado Division of Wildlife, 1974, pages 44, 63, 67, 91, 106.

has nine private camps, Meeker has two and Rifle has one trailer camp. The number of acres of public and private recreational land in the three county region is shown on Table III-12. A total of 458,000 acres are available for recreation.

The private recreation figures include only those privately owned areas classified as resorts or guest ranches. They do not include the considerable private land on which hunting takes place or the miles of fishing streams which are not part of a public area or a designated resort. The public recreation figures include those lands administered by a public agency and designated camping areas in the national forest. They do not include the vast total acreage of the forests. Public land figures also include the acreage of public parks within municipalities.<sup>1</sup>

Table III-13 gives the square miles of wilderness area in the region. It should be noted that wilderness areas do not necessarily serve the same needs as general recreation areas. For example, the Federal Government has inventoried some 20 natural, scenic or historic sites in Rio Blanco County including Flattops Wilderness, Douglas Creek, Cathedral Bluffs, Raven Ridge and Piceance Creek. However, sites, whether scenic, archaeological or historical, provide only limited opportunities for recreation and cannot withstand intensive public use.

Several boating lakes are available in the region. Boating lakes supervised by the Colorado Game, Fish & Parks Department and federal agencies are as follows: Heart Lake, Lake Avery, Lester Creek Reservoir, Ralph White Lake, Rifle Gap Reservoir, Rio Blanco Lake, Steamboat Lake and Upper Highline Reservoir.

It is obvious that most recreation facilities in the region are general and non-site-intensive. The site-intensive recreation areas that are available, are located mostly in or adjacent to the larger towns. Golf courses, playgrounds, rodeo arenas, swimming pools and tennis courts are scattered among the major towns in each county. Two major ski areas are also available to the area residents; Sunlight, near Glenwood Springs, and Powderhorn, near Grand Junction. The ski resort complexes of Aspen, Vail and Steamboat are also only a short distance from the tri-county area.

#### E. Community Development

In spite of the long term trends of population growth, increasing tourism and expanding residential and second home development, the three county region is still largely rural. Urban settlement occupied only about .03 percent of the land in Rio Blanco County, .13 percent in Garfield County and .28 percent in Mesa County in 1970. Only .16 percent of the land in the region as a whole is devoted to urban development (See Table III-3). Relatively little strip development disturbs the countryside and suburban development has largely been concentrated around the larger municipalities

---

1. THK Associates, 1973, pg. 16.

Table III-12  
PUBLIC AND PRIVATE RECREATIONAL LAND  
IN GARFIELD, MESA, AND RIO BLANCO COUNTIES

County	1972 Est. Population	Public Recreation Area (Acres)	Private Recreation Area (Acres)
Garfield	15,247	10,000	1,500
Mesa	55,287	3,000	80,000
Rio Blanco	<u>4,888</u>	<u>4,000</u>	<u>360,000</u>
Total	75,422	17,000	441,500

Source: THK Associates, 1973, page 16.

Table III-13  
NUMBER OF SQUARE MILES OF WILDERNESS AREA  
IN GARFIELD, MESA, AND RIO BLANCO COUNTIES  
(1970)

	Garfield	Mesa	Rio Blanco	Total
Square Miles	153.45	0	41.67	195.1

Source: THK Associates, 1973, page 4b.

such as Grand Junction and Glenwood Springs.

Urban settlements originated largely as agricultural trading and banking centers and occasionally as support centers for major oil or mining activity. The major towns in Mesa and Garfield counties lie along the east-west highway (I-70) which runs through Grand Junction on the west and Glenwood Springs on the east paralleling the Colorado River. In Rio Blanco County, the two major towns of Meeker and Rangely are located on the highway which runs north from Rifle to Meeker and then west from Meeker to Rangely along the basin's northern edge.

1. Development of Towns in the Region

- a. Garfield County

The early arrival of the railroads and the exploitation of nearby coal deposits were the prime incentives for development in the eastern portion of Garfield County. Glenwood Springs, the Garfield County seat, soon became a hub for east-west traffic along the Colorado River and for traffic south to the mines at Aspen along the Roaring Fork River. Glenwood Springs' estimated current population is 4,900.<sup>1</sup> The city is now a major service, supply and residential center for Garfield County and adjoining Pitkin County.

West of Glenwood Springs is Rifle. Rifle's road network runs east-west along the Colorado River and north to Rio Blanco County. Its location makes it an important agricultural supply center and a railroad shipping point for the area. Rifle's location also makes it a central pass-through point for persons traveling from Grand Junction, from Glenwood Springs and from Meeker or Rangely. The current population of Rifle is estimated to be 2,750.

West of Rifle, along the southern border of the Piceance Creek Basin at the mouth of Parachute Creek is Grand Valley. Grand Valley was established by livestock interests in the early 1880's and was later able to diversify with orchards and vegetable crops. Because of its lower elevation, Grand Valley enjoys milder winters, longer growing seasons, and better shelter from storms and blizzards than do those settlements further up the Colorado River. Since bluffs above Parachute Creek offer the richest shale in the southern portion of the Piceance Creek Basin, Grand Valley also was a residential area and staging site for much early experimental oil shale development.

- b. Mesa County

Further west and south of Grand Valley along the Colorado River, at the mouth of Roan Creek in Mesa County, lies DeBeque. Like Grand Valley, DeBeque was founded in the 1880's by ranching interests. Although

---

1. Current population figures presented in this section are estimates made by: McDowell-Smith, 1975 for the Colorado West Area Council of Governments.



DeBeque had early prominence as a livestock shipping point, the decline in sheep production in the Colorado River valley appreciably reduced stock car loadings. The town's population was about 250 in 1960 but had declined to an estimated 175 by 1970.

Still further west and south of DeBeque, is Grand Junction, the Mesa County seat, and the largest city in western Colorado, with an estimated 1975 population of over 27,000. It has been established for decades as the major banking, commercial and farming center for the entire region.

#### c. Rio Blanco County

Almost directly north of Rifle along the eastern border of the Piceance Creek Basin is Meeker, the Rio Blanco County seat. Meeker developed as an agricultural supply town serving the ranches in the surrounding fertile valley. Its current population is 2,150.

West of Meeker and located on the White River along the northern border of the Piceance Creek Basin is Rangely. While Meeker developed as an agricultural and banking center, Rangely grew primarily as an operations center for the Rangely oil fields. The current character of the town was largely shaped by the boom associated with the rapid expansion of the Rangely oil fields in the 1930's. The 1975 estimated population is 1,785.

One other settlement worthy of note in Rio Blanco County is the Rio Blanco Store at the intersection of the Piceance Creek road and the Rifle to Meeker road. The Rio Blanco Store apparently began as a stage stop for freight and stage service between Rifle and Meeker. Today the Rio Blanco Store is still the only roadside store between Rifle and Meeker. With substantial increases in the traffic along the Rifle-Meeker road, it could be a natural site for additional development. However, Rio Blanco County officials are considering prohibiting expansion at the site in order to discourage strip development along the highway.

## 2. Availability of Land for Future Growth

Table III-14 provides estimates of the amount of buildable land in the counties, eliminating from consideration areas with rugged landforms or steep slopes, the rivers, major floodplains and national forest land. The buildable area totals include the oil shale lands, so the figures might be considered high. Other factors such as the suitability of soils and bedrock and the location of septic tank fields must be taken into account. Limitations on septic tank filter fields are important because their use is closely associated with population growth and provision of housing. Areas acceptable for septic fields constitute a relatively small portion of each of the counties. It is not surprising to note that the areas suitable for septic tanks are also associated with the flat land of the river valleys and creek bottoms which also encompass the best agricultural lands and most convenient transportation corridors. Table III-15 breaks down the total number of square miles in each county according to whether the limitations on septic fields are



Table III-14

ESTIMATE OF TOTAL LAND AREA MOST SUITABLE FOR RESIDENTIAL  
DEVELOPMENT IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(In Square Miles)

County	Total Area	Buildable Area	Buildable Area Percent of Total Area
Garfield	2,997 sq. mi.	226 sq. mi.	7%
Mesa	3,303	515	16
Rio Blanco	<u>3,263</u>	<u>565</u>	<u>17</u>
Total	9,563 sq. mi.	1,306 sq. mi.	14%

Source: THK Associates, 1973, page 8.

Table III-15

LIMITATIONS ON SEPTIC TANK FILTER FIELDS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES

County	Total Area	Slight Limit	%	Moderate Limit	%	Severe Limit	%
Mesa County	3,303 sq. mi.	282.40	8.5%	860.40	26.0%	2,160.20	65.5%
Garfield	2,997 sq. mi.	123.75	4.1	27.00	1.0	2,846.25	94.5
Rio Blanco Co.	<u>3,263 sq. mi.</u>	<u>411.84</u>	<u>12.6</u>	<u>95.40</u>	<u>2.9</u>	<u>2,755.76</u>	<u>84.5</u>
Total	9,563 sq. mi.	817.99	8.5	982.80	10.2	7,762.21	81.3

Source: THK Associates, 1973, page 11.

slight and easily overcome, moderate and manageable with careful design, or severe, making residential use of the land highly questionable.

In addition to soil suitability, flood plain areas and steep slopes present other potential limitations on urban expansion and new development. However, water availability does not appear to be an immediately serious problem restricting residential growth.

Steep slopes to the northwest of Meeker and water erosion provide significant limitations on urban development around the town, particularly on those sloping fields and steep hillsides where rainfall brings large amounts of sediment to existing roads and drainageways. In addition, in irrigated areas, there are instances of high watertable conditions, flooding and subsidence.

At Rangely, much of the soil underlying the well-defined terraces and mesas is derived from the reworked residual clay beds of the Mancos Formation and suffers from problems such as high shrink swell, slow permeability, moderate water erodibility and high corrosivity.

When dense urban development is considered, the geographic features of the land assume even greater importance. Competing uses and ease of access become more critical and the probable effects of concentrated population on air and water quality must also be taken into account. Regulating growth and competing land uses then become a focus of much that has to do with the quality of life in an area.

### 3. Land Use Controls

Each of the counties and towns has managed growth and land use patterns differently depending on such factors as size, the nature of conflicting interests, and the political attitudes of the residents.

All three counties exercise zoning controls outside of the incorporated municipalities. In Rio Blanco and Mesa counties, zoning applies to all of the land in the county except for national forests. Each of the three ordinances (See Tables III-16, 17 and 18) describes restrictions on the use of land under several broad categories including residential, commercial, industrial, agricultural and open use.

Table III-19 shows in comparison the number of dwelling units per acre allowed under the various categories in each ordinance. It is worth noting that residential development is allowed in agricultural zones and in some commercial districts. While low densities are usually specified in the A districts, it is still possible under certain conditions to develop a subdivision of almost urban density in the agricultural areas of Rio Blanco or Garfield County. However, Meeker's new sketch plan specifically limits residential development on the prime agricultural lands near town. Garfield County's zoning ordinance allows the greatest range of densities.

The status of land use planning and zoning in the communities is

Table III-16  
ZONING DISTRICTS IN RIO BLANCO COUNTY

---

A	Agricultural. Allows single family dwelling on 5 acre lots not served by public sewer and on 12,000 square foot lots if served by a public sewer system.
R-R	Rural residential. Large tract housing for subdivisions and vacation homes. Same lot size requirements as A zone.
R-1	Standard single family residential. Minimum lot size, five acres in areas not served by public water and sewer systems and 9,000 square feet with public water and sewer service.
R-2	Multi-family residential and institutional. 9,000 square feet minimum lot size with at least 3,000 square feet for each dwelling unit.
H-B	Highway Business. Motels, hotels and associated commercial.
B	Business. General retail and services.
L-1	Light industrial. Industrial services and light manufacturing and fabrication.
H-1	Heavy industrial. Large industries with obvious external effects.
O	Open. Agriculture, certain open public uses and recreation.
MH	Mobile Homes. One mobile home allowed for each 3,000 square feet of land area.

---

Source: THK Associates, 1973, pages 26-29.

Table III-17  
ZONING DISTRICTS IN GARFIELD COUNTY

---

A	Agricultural. Allows single family dwellings on five acres of unsubdivided land and two acre subdivided lots.
A/1	Agricultural/Industrial. Agriculture, agriculture related industry and mineral extraction. Allows single family dwellings on five acres of unsubdivided land and two acre subdivided lots.
R/1/40	Single family residential. Minimum lot sizes: five acres for isolated dwellings, two acres in subdivisions with septic tanks and 40,000 square feet where primary and secondary treatment are provided.
R/1/12	Single family residential. Minimum lot sizes: five acres for isolated dwellings, two acres in subdivisions on septic tanks and 12,000 square feet where primary and secondary treatment are provided.
R/1/6	Single family residential. Minimum lot sizes: five acres for isolated dwellings, two acres in subdivisions on septic tanks and 6,000 square feet where primary and secondary treatment are provided.
R/1/6M	Mobile Homes. Minimum lot sizes same as for R/1/6 zone district.
R/3/40	Multiple family residential with transient accommodations. Minimum lot sizes as in R/1/40 district with a floor area ratio of .75 to 1.
A/R	Accommodations, resort district. Multiple family plus transient housing and light retail. Minimum lot size: five acres for a planned development, two acres where septic tanks are utilized, and 6,000 square feet where primary and secondary treatment is provided.
C/1	Limited commercial. General retail and service district. Minimum lot sizes and floor area ratio same as for A/R district.
C/2	Commercial and industrial. Intensive business and light manufacturing. Floor area ratio of 1.5 to 1.
I	Industrial. Agricultural, commercial and heavy industry. Floor area ratio of 1.0 to 1.

---

Source: THK Associates, 1973, pages 26-29.

Table III-18  
ZONING DISTRICTS IN MESA COUNTY

---

R-1-A	Single family residential. Minimum lot size – one acre.
R-1-B	Single family residential. Minimum lot size – ½ acre.
R-2	One and two family residential. Minimum lot size – ½ acre.
R-2-A	Single family residential. Minimum lot size – 2 ½ acres.
R-3	Multiple family residential and hospitals. Minimum lot size 14,000 square feet and 3,300 square feet for each dwelling unit.
R-4	Multi-family residential and colleges. Minimum lot size – 10,000 square feet and 2,500 square feet for each dwelling unit.
T	Tourist accommodations. Hotel/motels, restaurants and services. Minimum lot size – 10,000 square feet.
SC	Shopping Centers. General retail and services. Minimum lot size – five acres.
B	Business. General business and services.
ER	Electronics and research. Laboratories and manufacturing of electronic equipment. Minimum lot size – one acre.
C	Commercial. Intensive business.
PI	Planned industrial.
I	Industrial. Any business, commercial or industrial use.
AF-T	Agricultural and forestry. Agriculture related uses and certain public uses.
HS	Highway service. General traveller service and hotels.

---

Source: THK Associates, 1973, pages 26-29.

Table III-19  
MAXIMUM RESIDENTIAL DENSITIES ALLOWABLE IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Dwelling Units per acre) <sup>(a)</sup>

<u>Rio Blanco County</u>		<u>Garfield County</u>		<u>Mesa County</u>	
Zone Dist.	DU's/Acre	Zone Dist.	DU's/Acre	Zone Dist.	DU's/Acre
				R-2A	.4
		A, A/I, C/2	.5		
		R/1/40	1	R-1A	1
A, R-R	3.5	R/1/12	3.5	R-1B	2
R-1	4.6			R-2	4
		R/1/6	7		
		R/1/6M	7 mobile homes		
		R/3/40	10		
R-2	14			R-3	13
M-11	14 mobile homes	R/3/12	30	R-4	17
		A/R	20	AF-T	
HB	No apparent limitation				
		C/1	65		

Notes: (a) By way of comparison, the residential densities allowed by each county zoning ordinance are shown above by the zone district where residences are permitted (Number in Dwelling Units/Acre).

Source: THK Associates, 1973, page 29.



outlined in Table III-20. The 1968 General Plan is the latest set of planning guidelines available for communities in Garfield County. In many ways the plan is outdated, including much of the mapping and many of the zoning classifications.

Central Mesa County has recently completed a preliminary comprehensive plan for 1975 and a housing study for 1975. The comprehensive plan has not been subjected to public hearings and as such is only step one in the complex comprehensive planning process. The study considers development from Fruita through Grand Junction to Palisade. The remaining steps in the comprehensive planning process include an extensive analysis of existing land use, recommendations for community development and formalization and adoption of an overall plan.

Meeker and Rangely in Rio Blanco County have already begun hearings on sketch plans done for each community. These sketch plans have been done as part of the Rio Blanco Comprehensive Planning Program. Rangely did draw together a comprehensive plan in 1965. Meeker has not had a comprehensive plan in the past.

Rifle and Meeker are the two cities located in nearest proximity to Federal Lease Tract C-b. For this reason, it is useful to provide some additional information on land use in these cities.

#### a. Rifle

Rifle still has the 1968 Garfield County Comprehensive Plan at its disposal for use in deciding land use issues. The city has a planner who is currently working on upgrading subdivision regulations and zoning ordinances, supervising a preliminary EPA sewer study, preparing a land use and open space plan through the Colorado "1041" and "701" programs and completing a capital improvements and municipal street plan. Barring serious difficulties, a Master Plan will be available in approximately a year and a half. The city has enacted an increased tap fee and revised subdivision regulations which at this writing have received considerable criticism from Rifle residents.

#### b. Meeker

Meeker has prepared zoning regulations in accordance with Colorado statutes. The town also has initiated a Sketch Plan that is presently undergoing public hearings. The plan shows where development should occur in the Meeker area, namely "residential growth primarily to the east of town, as well as infill within the town, development of Sanderson Heights, and of a small area west of town."<sup>1</sup> The plan indicates the topographic limitations on growth and the limitation set by prime agricultural lands in the area.

Meeker and the county have taken important steps toward developing a

---

1. McDowell-Smith and Associates, Draft, December, 1975, pgs. 8-13

Table III-20

PLANNING SUMMARY FOR SELECTED COMMUNITIES IN THE REGION  
(1975)

Town	County	Existing Pop.	1980 Pop. Proj.	Zoning	Sub. Regs.	Planning/ Zoning Commission	Comprehensive Plan	Planning Director	Comments
Glenwood Springs	Garfield	4,900	9,800	+	+	+	1968	+	Included in 1968 Garfield County Plan.
Grand Junction	Mesa	27,100	35,700	+	+	+	1970	+	1970 Comprehensive Plan
Grand Valley	Garfield	500	2,000	-	-	+	-	-	Included in 1968 Garfield County Plan.
Meeker	Rio Blanco	2,150	6,200	+	+	+	-	-	Sketch Plan currently under discussion for development into adoptable comprehensive plan.
Rangely	Rio Blanco	1,785	6,100	+	+	+	1965	-	Sketch Plan currently under discussion for development into adoptable comprehensive plan. 1965 plan in force.
Rifle	Garfield	2,750	8,600	+	+	+	1968	+	Included in 1968 Garfield Plan. Needs updating.

Source: McDowell-Smith and Associates Draft, December, 1975, pages 8-15.

workable plan with adequate regulatory provisions. During this process, Meeker has so far begun construction of new modular sewer and water facilities, added new rooms to the high school, and, following an education plan, approved a new junior high school with construction beginning in 1976.

If planning and regulation continues to follow the trends already set for Meeker and if the local people support such measures, Meeker may be a model city where a boom situation becomes an orderly growth process.

CHAPTER IV

ECONOMY OF THE REGION

---



## CHAPTER IV    ECONOMY OF THE REGION

### A.    Introduction and Summary

This chapter focuses on the structure and activities of the economics of Garfield, Mesa and Rio Blanco Counties and the region. Projected economic trends not including rapid industrial development are also presented.

The economy of the three county region is primarily based on agriculture and tourism. However, agriculture has declined as the most important source of income in this region over the past several years. Tourism and public services, such as education, have grown in Garfield County. Mesa County has experienced growth in manufacturing and in public services. Rio Blanco County has shown increases in trade and in public services.

The labor participation rate has increased in Mesa and Garfield counties, but has recently declined in Rio Blanco County. Increases in the labor participation rate are partly due to newly opened fields such as education and health in which job opportunities are opening up for women. This has contributed to the increase in percentage of households with more than one person working. The decline in Rio Blanco County's labor participation rate between 1970 and 1974 is probably due to a general increase in unemployment in that county. Also, heads of households employed in traditional areas, appear to have changed occupations and to be working in fields where new opportunities are available. Such a situation would not provide many opportunities for other members of households to fill available positions. Otherwise, unemployment has generally decreased since 1970 in Garfield and Mesa Counties as it has in Colorado.

Median family income, as a percentage of the state average, has declined in all three counties between 1960 and 1970. Rio Blanco County has experienced a major decline in this indicator from 111 percent in 1950 to 83 percent in 1970. The three counties are approximately equal to the State of Colorado in percentage of families below the poverty level. Garfield had less families below the poverty level than did the state, while Mesa had more.

Retail sales have increased substantially in dollars between 1960 and 1974. This rise reflects growth in the tourist and services sectors, especially in Garfield and Mesa Counties.

If positive economic trends continue in the three counties, trade, services and public services will be increasingly important areas of employment. Some growth will occur in the mining, manufacturing and construction industries. Agriculture is also expected to decline somewhat more than it has already.



## B. Economic Structure

The economy of the three county region is dependent primarily on the basic industries of tourism and agriculture, with construction, mining and manufacturing being the other major contributing sectors. Agriculture has been declining significantly in the three counties as it has throughout the nation. Its dominance has recently been challenged by tourism-related services and construction activity, which are developing rapidly particularly in Garfield County. Were it not for the continued dependence of Mesa County on agriculture, the tourism-related industries would lead the region in overall contribution.

Table IV-1 summarizes the importance of the major economic sectors within each county and the region, ranked according to importance as sources of basic income. The table depicts the region as being economically diversified, while fairly strong dependence on one or two specific sectors still characterizes the individual counties. Mesa County, traditionally an agriculturally based area, is turning increasingly toward manufacturing, trade and services in its emerging role as the commercial hub of Western Colorado. Garfield County continues to experience rapid growth as a tourism-oriented trade and construction center, serving the growing recreational areas to the east and south of Glenwood Springs. Rio Blanco County's economy has been fairly evenly divided between mining and agriculture for the past two decades with frequent fluctuations in demand for both livestock and petroleum products determining the dominance of one industry at any given time.

## C. Economic Activity

### 1. Employment Rates

The economies of all three counties, and the oil shale region as a whole are in a state of transition. This change is generally characterized by the decline of agriculture, increased levels of activity in the basic sectors, and an expanding local services sector. The data in Tables IV-2 through 4 show that agriculture and mining, which have traditionally dominated the regional economy, are employing people at rates roughly equal to employment in the manufacturing, trade and public services sectors.

### 2. Labor Participation Rates

The labor participation rate, the percentage of the population which is employed, has increased substantially in all three counties from 1950-1974 (See Tables IV-5 and 6). These increases are indicative of the fundamental changes which are occurring in the region, i.e., the newer areas of employment such as trade and public services have opened up opportunities for women and have increased the percentage of households with more than one person working, thus increasing the labor participation rate.

In Garfield County, the rate has risen 15 percent since 1970 due in large part to the growth of the services sector in response to a rapidly

Table IV-1  
BASIC INCOME SOURCES RANKED IN ORDER OF IMPORTANCE  
FOR GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION

	Garfield	Mesa	Rio Blanco	Three County Region
Agriculture	3	1	2	1
Mining	4		1	4
Construction	1			3
Tourism & Trade (includes services)	2	2		1
Manufacturing		2		4

Notes: (a) These rankings compare the quantities of basic income generated in each sector from wage, salary, and proprietorship income.

Source: Gilmore, 1973, page 1.

Table IV-2  
EMPLOYMENT BY INDUSTRY FOR GARFIELD COUNTY  
(Percent)  
(1950 - 1970)

Industries	1970	1960	1950
Agriculture	9.5	17.1	30.1
Mining	6.7	11.6	5.3
Construction	11.5	8.3	9.0
Manufacturing	2.8	2.7	3.9
Transportation	6.8	5.7	6.4
Trade	23.7	20.3	17.4
Services, including lodging & finance	16.8	12.8	12.3
Health services and other professions	9.6	6.2	3.5
Education	7.8	5.7	4.0
Public Administration	4.3	4.8	4.1

Source: Gilmore, 1973, pages 19 and 21.

Table IV-3  
EMPLOYMENT BY INDUSTRY FOR MESA COUNTY  
(Percent)  
(1950 - 1970)

Industries	1970	1960	1950
Agriculture	7.3	11.4	22.0
Mining	2.3	5.5	2.0
Construction	6.2	7.6	9.2
Manufacturing	10.1	6.7	4.7
Transportation	9.8	9.7	12.6
Trade	21.3	21.5	20.1
Services, including lodging & finance	13.3	13.3	12.4
Health services and other professions	12.6	9.0	5.8
Education	10.0	6.5	4.4
Public Administration	5.2	5.8	4.6

Source: Gilmore, 1973, pages 19 and 21.

Table IV-4  
EMPLOYMENT BY INDUSTRY FOR RIO BLANCO COUNTY  
(Percent)  
(1950 - 1970)

Industries	1970	1960	1950
Agriculture	15.1	16.4	26.3
Mining	14.3	19.9	21.8
Construction	7.8	7.7	9.3
Manufacturing	2.1	2.3	2.1
Transportation	4.8	7.7	6.3
Trade	13.9	12.2	12.8
Services, including lodging & finance	12.3	13.8	10.4
Health Services and other professions	9.5	4.2	1.7
Education	11.9	5.3	4.0
Public Administration	7.8	4.0	4.4

Source: Gilmore, 1973, page 23.

Table IV-5

LABOR PARTICIPATION RATES FOR GARFIELD, MESA AND  
RIO BLANCO COUNTIES, THE REGION AND THE STATE OF COLORADO  
(Percent) (a)  
(1950 - 1970)

Year	<u>Garfield</u>		<u>Mesa</u>		<u>Rio Blanco</u>		Three County Region	<u>State</u>	
	% Employed	Total Employment	% Employed	Total Employment	% Employed	Total Employment		% Employed	Total Employment
1974	54.6	9,010	46.4	26,560	38.6	2,010	47.6	42.5	1,059,500
1970	39.6	5,865	37.0	20,125	40.2	1,946	37.7	39.6	874,700
1960	37.5	4,501	35.2	17,841	29.1	2,013	35.9	37.8	663,000
1950	37.8	4,389	34.5	13,427	37.2	1,754	35.4	37.6	497,800

Notes: (a) The Table includes all those 16 years of age and older.

Source: 1. Derived from Gilmore, 1973, pages 16-23.  
2. Colorado Division of Employment, 1976, pages 27 and 32.



Table IV-6  
LABOR FORCE PARTICIPATION RATES BY AGE FOR REGION 11, THE COUNTIES OF REGION 11  
AND GRAND JUNCTION (a)

Age	Region 11		Garfield County		Mesa County		Moffat County		Rio Blanco County		Grand Junction	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 - 4	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5 - 9	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
10 - 14	.036	.026	.059	.043	.028	.024	.059	.014	.027	.017	.045	.040
15 - 19	.449	.353	.538	.413	.406	.338	.635	.426	.417	.236	.428	.382
20 - 24	.816	.484	.860	.504	.773	.506	.999	.316	.921	.410	.764	.593
25 - 29	.946	.426	.982	.400	.931	.435	.975	.403	.968	.432	.978	.509
30 - 34	.946	.426	.982	.400	.931	.435	.975	.403	.968	.432	.978	.509
35 - 39	.944	.551	.965	.488	.931	.560	.977	.550	.986	.644	.926	.572
40 - 44	.944	.551	.965	.488	.931	.560	.977	.550	.986	.644	.926	.572
45 - 49	.854	.480	.877	.479	.844	.477	.870	.509	.878	.471	.858	.517
50 - 54	.854	.480	.877	.479	.844	.477	.870	.509	.878	.471	.858	.517
55 - 59	.854	.480	.877	.479	.844	.477	.870	.509	.878	.471	.858	.517
60 - 64	.854	.480	.877	.479	.844	.477	.870	.509	.878	.471	.858	.517
65 - 69	.247	.088	.308	.119	.222	.081	.260	.092	.328	.073	.215	.098
70 - 74	.247	.088	.308	.119	.222	.081	.260	.092	.328	.073	.215	.098
75 - 79	.247	.088	.308	.119	.222	.081	.260	.092	.328	.073	.215	.098
80 - 84	.247	.088	.308	.119	.222	.081	.260	.092	.328	.073	.215	.098
85+	.247	.088	.308	.119	.222	.081	.260	.092	.328	.073	.215	.098

Notes: (a) Region 11 LFPR are a weighted average of county LFPR - Bureau of the Census, 1970, City LFPR will be those of the county they reside in except for Grand Junction.

Source: State of Colorado, IMPACT, 1974, Vol. 5, page 212.

developing tourism industry. Mesa County also has experienced a substantial rise in labor participation which can be attributed to significant development in the industries of health, other professional services and education. This trend is indicative of Mesa County's emerging role as the major service center for the three county region.

Rio Blanco County is the only one of the three counties in which the labor participation rate is lower than the state average and has in fact declined since 1970 (although it is substantially higher than in 1960). A probable explanation for this pattern is that job opportunities in agriculture and mining have declined so greatly that the increased employment in health services and education represents occupational changes by heads of households rather than new supplemental employment, as was the case in the other counties.

Table IV-7 shows the rate of unemployment within the counties from 1950-1974. The differentiation between the labor participation rate and the employment figures should be noted. Employment is defined as that percentage of the labor force which is employed rather than that percentage of the total population. In each county the unemployment rate decreased from 1960 to 1970, while for the state the rate was up. Since 1970 unemployment has further decreased in Garfield and Mesa Counties. Although it has risen in Rio Blanco County, the rate is considerably lower than the state average. Unemployment by sex, as illustrated in Table IV-8, shows that in each county more females in the labor force were employed in 1970 than in 1960.

Finding employment in the area is difficult according to the majority of local residents. This opinion was most prevalent among Mesa County residents and least prevalent among those in Rio Blanco County. Public officials, in general, saw this difficulty as less of a problem than did local residents (see Table IV-9). Self-reported underemployment, in terms of non-utilized skills, was prevalent throughout the region with some 38 percent of survey respondents declaring they were underemployed (see Table IV-10). This percentage of self-reported underemployment was greatest in Mesa County and least in Garfield County.

### 3. Income Levels

Average family income levels in the three county region have generally decreased since 1950 (see Table IV-11). This is particularly true in Rio Blanco County which has dropped from 110.9 percent of the state average median family income in 1950 to 83.3 percent in 1970. The severity of this decrease as compared to that of the other counties is attributed to the decline of activity within the agricultural and mining sectors. In Mesa and Garfield Counties this decline has been somewhat offset by development within the services and construction sectors. However, this trend had not, as of 1970, shown any appreciable effects on income levels in Rio Blanco. The percentage of families with incomes below the poverty level in 1970 (see Table IV-12) was only slightly higher for the three county region than the state average.

Table IV-7  
UNEMPLOYMENT IN THE LABOR FORCE IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(Percent)  
(1950 - 1970)

Year	State <sup>3</sup>	Garfield <sup>1</sup>	Mesa <sup>1</sup>	Rio Blanco <sup>1</sup>
1974	3.8 %	3.8 %	4.1 %	2.4 %
1970	4.2	4.8	5.4	2.1
1960	3.6	7.7	6.0	4.2
1950	4.2	3.1	5.4	4.3

Source:

1. Information on unemployment in the counties from 1950 to 1970 is found in Gilmore, 1973, pages 18 - 23.
2. Information on unemployment in the counties for 1974 is found in Colorado Division of Employment, 1974.
3. Information on unemployment in the State of Colorado for four years is found in U.S. Bureau of Census, Census Population, 1950.

Table IV-8  
UNEMPLOYMENT IN THE LABOR FORCE BY SEX AND AGE FOR  
GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(Percent)  
(1950 - 1970)

Year	Sex and Age	Garfield %	Mesa %	Rio Blanco %	State %
1970	Male: (14 & over for State) (16 and over for County)	5.4	5.8	1.3	2.8%
	Female: (14 & over)	4.1	4.8	3.8	1.9
1960	Male: 14 & over	6.3	5.5	3.8	3.9
	Female: 14 & over	9.2	6.1	4.5	4.2
1950	Male: 14 & over	2.7	5.4	4.2	4.4
	Female: 14 & over	4.0	4.4	3.7	3.8

Source: U.S. Bureau of the Census, Census of Population, 1970, 1960, 1950.

Table IV-9

ATTITUDES TOWARD THE LOCAL EMPLOYMENT SITUATION AND THE  
WAGE SCALE IN GARFIELD, MESA AND RIO BLANCO COUNTIES

Statement	Garfield	Residents		Garfield	Public Officials	
		Mesa	Rio Blanco		Mesa	Rio Blanco
There's little difficulty finding employment around here.						
Agree	23%	19%	33%	41%	25%	63%
Uncertain	12	11	6	8	8	5
Disagree	64	69	61	51	67	32
The pay scale for employment in this area is generally good.						
Agree	34%	12%	40%	54%	14%	53%
Uncertain	12	8	8	5	3	—
Disagree	54	80	52	41	83	47

Source: Bickert, 1973, page 34.

Table IV-10

EMPLOYMENT STATUS OF RESIDENTS IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Percent)

Employment Status	Sample	Garfield	Mesa	Rio Blanco
Head of household employed	78%	74%	79%	75%
Head of household retired	11	12	11	6
Head of household unemployed	2	6	1	9
No answer	8	7	9	10
Spouse employed	39	25	42	46
Head of household possesses non-utilized occupational skills	38	32	39	34
Spouse possesses non-utilized occupational skills	30	36	30	22

Source: Adapted from Bickert, 1973, page 34.



Table IV-11

MEDIAN FAMILY INCOME AS A PERCENT OF THE STATE AVERAGE INCOME  
FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1950 - 1970)

Year	Garfield	Mesa	Rio Blanco
1970	87.7%	84.4%	83.3%
1960	90.3	92.9	101.9
1950	90.4	86.2	110.9

Source: Derived from Gilmore, 1973, pages 16 - 23.

Table IV-12

FAMILIES BELOW THE POVERTY LEVEL  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Percent)  
(1970)

Garfield <sup>1</sup>	Mesa <sup>1</sup>	Rio Blanco <sup>1</sup>	State <sup>2</sup>
8.4%	11.4%	10.1%	9.1%

Source: 1. Derived form Gilmore, 1973, pages 16 - 23.  
2. U.S. Bureau of the Census, Census of Population, 1970.

A breakdown of the number and percentage of families at each income level for 1960 and 1970 indicates that although income levels may be lower than the state average there has been a marked improvement since 1960 (see Tables IV-13 through 15). This improvement is evident not only in the percentage of families at each level, a figure which may be indicative of inflation and in-migration of higher income level families, but also in the absolute number of families at each level. A drop in the number at lower levels suggests a general increase in family income for the three county region.

Table IV-16 shows the number and percentage of families receiving income from Social Security, Public Assistance, or Public Welfare in 1970, as compared to the state average. Garfield and Mesa Counties are somewhat above the state's average while Rio Blanco County is slightly below.

#### 4. Retail Sales

Retail sales for the three counties have risen substantially since 1960 with the great bulk of this increase having occurred since 1970 (see Table IV-17). The figures are a good indicator of the rapid development of the trade and services sectors in the region in recent years.

#### D. Economic Trends

##### 1. Forecasting Methodology

The relationship between basic economic activity and local service activity is a key element in forecasting economic changes. The ratio of basic industry jobs (those jobs supported by capital imported from another area) to local service jobs (those jobs dependent on capital from the basic industry) can be calculated for any area. The resulting ratio provides a multiplier that can be used to predict the number of local service jobs and total local employment from changes in the number of basic industry jobs. Once the number of basic industry jobs that will be filled in an area is known, it is also possible to project the total population for given labor participation rates and family sizes.

The ratio of basic industry jobs to local service jobs will vary with each economic sector. The higher the basic income, the greater the number of local service jobs which can be supported by any sector. The multipliers that currently apply to the three county area are given in Table IV-18. As a general rule the size of the multipliers increases over time as an economy develops. For a more complex economy there will be a greater number and wider range of locally provided goods and services. Also basic income will circulate longer through the local economy. For example, a large city may have a multiplier of 5, whereas a small city has a multiplier of .8.

Under normal circumstances where no major economic changes are anticipated, future growth of the economy can be forecasted on the basis of projections of the prevailing economic trends. Therefore, when the future

Table IV-13  
INCOME LEVELS OF FAMILIES IN GARFIELD COUNTY  
(Number and Percent)  
(1960 and 1970)

Income Level(a)	1970		1960	
\$ 0 - \$3,999	15.3%	633	34.6%	1,105
\$4,000 - \$6,999	22.2	922	37.5	1,198
\$7,000 - \$9,999	23.3	969	19.2	613
\$10,000 +	<u>39.2</u>	<u>1,632</u>	<u>8.9</u>	<u>284</u>
	100.0%	4,156	100.0%	3,200

Notes: (a) Figures are reported in 1970 and 1960 dollars respectively.

Source: U.S. Bureau of the Census, Census of Population, 1970.

Table IV-14  
INCOME LEVELS OF FAMILIES IN MESA COUNTY  
(Number and Percent)  
(1960 and 1970)

Income Level (a)	1970		1960	
\$ 0 — \$ 3,999	20.3%	2,842	32.5%	4,256
\$ 4,000 — \$ 6,999	21.8%	3,044	37.3%	4,890
\$ 7,000 — \$ 9,999	22.1%	3,083	19.6%	2,561
\$10,000 +	<u>35.8%</u>	<u>5,004</u>	<u>10.6%</u>	<u>2,195</u>
	100.0%	13,973	100.0%	13,092

Notes: (a) Figures are reported in 1970 and 1960 dollars respectively.

Source: U.S. Bureau of the Census, U.S. Census of Population, 1970

Table IV-15  
INCOME LEVELS OF FAMILIES IN RIO BLANCO COUNTY  
(Number and Percent)  
(1960 and 1970)

Income Level (a)	1970		1960	
\$ 0 — \$ 3,999	14.9%	192	24.8%	342
\$ 4,000 — \$ 6,999	15.2%	196	44.1%	610
\$ 7,000 — \$ 9,999	26.4%	338	17.1%	236
\$10,000 +	<u>43.5%</u>	<u>559</u>	<u>14.0%</u>	<u>194</u>
	100.0%	1,285	100.0%	1,382

Notes: (a) Figures are reported in 1970 and 1960 dollars respectively.

Source: U.S. Bureau of the Census, U.S. Census of Population, 1970.

Table IV-16

FAMILIES RECEIVING SOCIAL SECURITY, PUBLIC ASSISTANCE, OR PUBLIC  
WELFARE INCOME IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE  
STATE OF COLORADO  
(Number and Percent)  
(1970)

	Garfield	Mesa	Rio Blanco	Colorado
Percent	26.1%	29.7%	18.1%	21.1%
Number	1,086	4,156	232	547,165

Source: U.S. Bureau of the Census, Census of Population, 1970.

Table IV-17

RETAIL SALES IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960, 1970, 1974)

County	1974	1970	1960
Garfield	\$116.7 mm	\$ 57.6 mm	\$ 25.9 mm
Mesa	\$303.7 mm	\$170.8 mm	\$101.4 mm
Rio Blanco	\$ 20.9 mm	\$ 10.8 mm	\$ 8.6 mm

Source: Colorado Department of Revenue, 1960, 1970, 1974.

Table IV-18  
BASIC TO LOCAL SERVICE MULTIPLIERS IN GARFIELD,  
MESA AND RIO BLANCO COUNTIES AND THE REGION

Industries	Garfield	Mesa	Rio Blanco	Three County Region
Agriculture	1.1	1.6	1.2	1.4
Mining	1.9	2.1	1.3	2.0
Construction	1.5	2.2	1.0	1.9
Manufacturing	1.0	1.5	1.1	1.3
Transportation and Communication	1.2	1.9	1.2	1.6
Trade	.8	1.2	.7	1.0
Services	.8	1.4	.6	1.1
Health Services	.9	1.4	.8	1.2
Education	1.0	1.6	1.0	1.3
Welfare and Misc. Professions	1.3	2.1	1.1	1.8
Public Administration	.9	1.6	.8	1.3

Source: Gilmore, 1973, page 4.



prospects for economic growth based on these traditional economic trends in the three county region is examined, the multiplier projection (method) can be used. In the event of major economic changes, such as introduction to new industry, existing multipliers would no longer apply.

This method provides a rough estimate of future economic growth. It is, however, heavily influenced by assumptions made about the rate of economic growth and future distribution of employment. If the limitations are clearly understood, the "multiplier" method can be very useful in forecasting a rough profile of economic changes.

The major underlying assumption used in this analysis is that the transition from agriculture to a more urbanized, service-based economy centered around tourism will continue in the three county region. It is anticipated that agriculture will remain an important element in the economy, but will be equalled or surpassed in relative importance by the newer developing sectors of the economy. The developing sectors are expected to continue to be the primary sources of economic growth.

Tables IV-19 through 22 summarize the 1977 forecasts of employment and income trends as projected using the "multiplier" method. Certain assumptions have been made which should be recognized. The multipliers used in the predictions are based on estimated figures rather than on surveys. Also, no compensation has been made for the growth of the multipliers which will undoubtedly occur as the local and regional economies grow in size and complexity. However, it is assumed that the growth of these multipliers will be negligible by 1977.

## 2. Agriculture

According to these projections, agriculture, in the three county region, will continue to decline in relative importance through 1977 while agricultural employment and income levels will remain fairly stationary throughout this period. Replacing agriculture as the most important sector of the regional economy is expected to be the retail and wholesale trade followed by services and construction. The growth in all three of these sectors can be attributed directly to development of the tourism industry, especially in Garfield County.

## 3. Tourism

Since Garfield County is heavily dependent upon the adjacent recreation areas in Pitkin and Eagle Counties for tourist-related business, any future growth control policies or significant decreases in tourist activity in these counties would strongly impact the economy of Garfield County. Tourist-related business in Mesa County can be expected to grow considerably as overall population growth, particularly in the Grand Junction area, necessitates a broader scope of services. Little increase is expected in tourist-related business in Rio Blanco County.

Table IV-19  
STRUCTURE OF ECONOMIC ACTIVITY AS INDICATED BY PERSONAL INCOME IN GARFIELD COUNTY  
(1971 and 1977)

	1971(a)							1977						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Basic Employ- ment	Local Service Employ- ment (3-1)	Total Employ- ment	Income Rate	Basic Income (1x4)	Local Service Income (2x4)	Total Income (3+6)	Basic Employ- ment	Local Service Employ- ment	Total Employ- ment	Income Rate (1971 x 1.21)	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)
Agriculture	425	75	500	\$ 7,500	\$ 3,187,500	\$ 562,500	\$ 3,750,000	450	50	500	\$ 9,075	\$ 4,310,625	\$ 226,875	\$ 4,537,500
Mining	230	10	240	\$13,000	\$ 2,990,000	\$ 130,000	\$ 3,120,000	340	20	360	\$15,730	\$ 5,348,200	\$ 314,600	\$ 5,662,800
Construction	800	150	950	\$10,000	\$ 8,000,000	\$ 1,500,000	\$ 9,500,000	950	213	1,163(c)	\$12,100	\$11,495,000	\$ 2,577,300	\$14,072,300
Manufacturing	35	140	175	\$ 6,800	\$ 238,000	\$ 952,000	\$ 1,190,000	65	165	230	\$ 8,228	\$ 534,820	\$ 1,357,620	\$ 1,892,440
Trans., Comm. & Utilities	90	330	420	\$ 8,200	\$ 738,000	\$ 2,706,000	\$ 3,444,000	125	430	555	\$ 6,776	\$ 847,000	\$ 2,913,680	\$ 3,760,680
Wholesale and Retail Trade	425	1,075	1,500	\$ 5,300	\$ 2,252,500	\$ 5,697,500	\$ 7,950,000	680	1,430	2,110	\$ 6,413	\$ 4,360,840	\$ 9,170,590	\$13,531,430
Services	350	750	1,100	\$ 5,500	\$ 1,925,000	\$ 4,125,000	\$ 6,050,000	555	990	1,545	\$ 6,655	\$ 3,693,525	\$ 6,588,450	\$10,281,975
Health Services	35	365	400	\$ 6,000	\$ 210,000	\$ 2,190,000	\$ 2,400,000	45	485	530	\$ 7,260	\$ 326,700	\$ 3,521,100	\$ 3,847,800
Education	100	380	480	\$ 7,000	\$ 700,000	\$ 2,660,000	\$ 3,360,000	130	505	635	\$ 8,470	\$ 1,101,100	\$ 4,277,350	\$ 5,378,450
Welfare and Misc. Professions	25	225	250	\$ 9,000	\$ 225,000	\$ 2,025,000	\$ 2,250,000	35	295	330	\$10,890	\$ 381,150	\$ 3,212,550	\$ 3,593,700
Public Adm.	20	240	260	\$ 6,500	\$ 130,000	\$ 1,560,000	\$ 1,690,000	30	315	345	\$ 7,865	\$ 235,950	\$ 2,477,475	\$ 2,713,425
Property Income and Net Transfer Payments(b)												\$ 6,927,250	\$ 6,927,250	\$13,854,500
TOTAL EMPLOYMENT	2,535	3,740	6,275			\$25,066,400	\$53,644,800	3,430	4,873	8,303			\$39,562,160	\$83,127,000
TOTAL INCOME														

Notes: (a) This is 1971 adjusted for two major discontinuities in 1972: the shutdowns of the Union Carbide mill in Rifle and of the Colony pilot plant on Parachute Creek. Thus, this reflects 1971 levels of activity in the economic structure existing in 1972.

(b) Property income is estimated at 20 percent of income from industrial sectors (.20 x \$44,704,000 = \$8,940,000 divided ½ basic, ½ local service, 1971).

(c) See notes for vulnerability of this to change in Aspen activity. This figure could lie anywhere between 500 and 1,400, depending on the scenario of 1977 construction.

Source: Gilmore, 1973, page 8.

Table IV-20

STRUCTURE OF ECONOMIC ACTIVITY AS INDICATED BY PERSONAL INCOME  
IN MESA COUNTY (a)  
(1971 and 1977)

	1971			1977						
	1	2	3	4	5	6	7	8	9	10
	Basic Employ- ment	Local Service Employ- ment (3-1)	Total Employ- ment	Income Rate	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)	Basic Employ- ment	Local Service Employ- ment	Total Employ- ment
Agriculture	1,250	150	1,400	\$ 7,000	\$ 8,750,000	\$ 1,050,000	\$ 9,800,000	1,150	150	1,300
Mining	280	70	350	\$ 9,200	\$ 2,376,000	\$ 644,000	\$ 3,220,000	305	100	405
Construction	500	1,100	1,600	\$10,000	\$ 5,000,000	\$ 11,000,000	\$ 16,000,000	605	1,255	1,860
Manufacturing	1,250	550	1,800	\$ 6,800	\$ 8,500,000	\$ 3,740,000	\$ 12,240,000	1,440	650	2,090
Trans., Comm. & Utilities	400	1,600	2,000	\$ 8,500	\$ 3,400,000	\$ 13,600,000	\$ 17,000,000	425	1,760	2,185
Wholesale and Retail Trade	900	3,550	4,450	\$ 5,500	\$ 4,950,000	\$ 19,525,000	\$ 24,475,000	1,270	4,120	5,390
Services	900	2,050	2,950	\$ 6,300	\$ 5,670,000	\$ 12,915,000	\$ 18,585,000	1,270	2,380	3,650
Health Services	200	1,700	1,900	\$ 6,400	\$ 1,280,000	\$ 10,880,000	\$ 12,160,000	235	1,970	2,205
Education	400	1,650	2,050	\$ 7,000	\$ 2,800,000	\$ 11,550,000	\$ 14,350,000	530	1,850	2,380
Welfare and Misc. Professions	50	800	850	\$ 9,500	\$ 475,000	\$ 7,600,000	\$ 8,075,000	50	935	985
Public Adm.	500	550	1,050	\$ 7,000	\$ 3,500,000	\$ 3,850,000	\$ 7,350,000	580	640	1,220
Property Income and Net Transfer Payments(b)										
TOTAL EMPLOYMENT	6,630	13,770	20,400					7,860	15,810	23,670
TOTAL INCOME					\$61,226,500	\$110,679,500	\$171,906,000			
								\$86,622,050	\$153,660,550	\$240,282,600

Notes: (a) Basic to local service relationships estimates, supplemented by information in Seastone's 1963 input-output study of Mesa County as adjusted (judgmentally) for the decline of the uranium industry and its related trucking transportation.

(b) Property income estimated at 20 percent of income from industrial sectors ( $20 \times 143,255,000 = \$28,651,000$  divided  $\frac{1}{2}$  basic,  $\frac{1}{2}$  local service).

Source: Gilmore, 1973, page 8.

Table IV-21  
STRUCTURE OF ECONOMIC ACTIVITY AS INDICATED BY PERSONAL INCOME  
IN RIO BLANCO COUNTY  
(1971 and 1977)

	1971						1977							
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Basic Employ- ment	Local Service Employ- ment (3-1)	Total Employ- ment	Income Rate	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)	Basic Employ- ment	Local Service Employ- ment	Total Employ- ment	Income Rate (1971 x 1.21)	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)
Agriculture	255	5	255	\$ 9,000	\$ 2,250,000	\$ 45,000	\$ 2,295,000	230	5	235	\$10,900	\$2,507,000	\$ 54,500	\$ 2,561,500
Mining	295	5	300	\$10,000	\$ 2,950,000	\$ 50,000	\$ 3,000,000	250	6	256	\$12,100	\$3,025,000	\$ 72,600	\$ 3,097,600
Construction	100	50	150	\$ 7,400	\$ 740,000	\$ 370,000	\$ 1,110,000	78	60	138	\$ 8,950	\$ 698,100	\$ 537,000	\$ 1,235,100
Manufacturing	10	35	45	\$ 8,400	\$ 84,000	\$ 294,000	\$ 378,000	10	30	40	\$10,150	\$ 101,500	\$ 304,500	\$ 406,000
Trans., Comm. & Utilities	20	75	95	\$ 9,200	\$ 184,000	\$ 690,000	\$ 874,000	20	85	105	\$11,150	\$ 223,000	\$ 947,750	\$ 1,170,750
Wholesale and Retail Trade	50	225	275	\$ 5,200	\$ 260,000	\$1,170,000	\$ 1,430,000	45	220	265	\$ 6,300	\$ 283,500	\$1,386,000	\$ 1,669,500
Services	60	200	260	\$ 4,500	\$ 270,000	\$ 900,000	\$ 1,170,000	60	200	260	\$ 5,450	\$ 327,000	\$1,090,000	\$ 1,417,000
Health Services	0	120	120	\$ 6,000	—	\$ 720,000	\$ 720,000	—	110	110	\$ 7,250	—	\$ 797,500	\$ 797,500
Education	30	190	220	\$ 7,500	\$ 225,000	\$1,425,000	\$ 1,650,000	15	170	185	\$ 9,100	\$ 136,500	\$1,547,000	\$ 1,683,500
Welfare and Misc. Professions	5	60	65	\$ 8,000	\$ 40,000	\$ 480,000	\$ 520,000	5	55	60	\$ 9,700	\$ 48,500	\$ 533,500	\$ 582,000
Public Adm.	0	150	150	\$ 6,000	—	\$ 900,000	\$ 900,000	—	140	140	\$ 7,250	—	\$1,015,000	\$ 1,015,000
Property Income and Net Transfer Payments(a)												\$1,563,545	\$1,563,545	\$ 3,127,000
TOTAL EMPLOYMENT	820	1,115	1,935		\$ 8,407,700	\$8,448,700	\$16,856,400	713	1,081	1,794		\$8,913,645	\$9,848,895	\$18,762,540
TOTAL INCOME														

Notes: (a) Property income is estimated at 20 percent of income from industrial sectors.

Source: Gilmore, 1973, page 9.

Table IV-22  
STRUCTURE OF ECONOMIC ACTIVITY AS INDICATED BY PERSONAL INCOME  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1971 and 1977)

	1971				1977									
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Basic Employ- ment	Local Service Employ- ment (3-1)	Total Employ- ment	Income Rate	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)	Basic Employ- ment	Local Service Employ- ment	Total Employ- ment	Income (weighted average)	Basic Income (1x4)	Local Service Income (2x4)	Total Income (5+6)
Agriculture	1,925	230	2,155	\$ 7,353	\$14,187,500	\$ 1,657,500	\$ 15,845,000	1,830	205	2,035	\$ 8,886	\$ 16,535,125	\$ 1,548,875	\$ 18,084,000
Mining	805	85	890	\$10,494	\$ 8,516,000	\$ 824,000	\$ 9,340,000	895	126	1,021	\$12,993	\$ 11,773,950	\$ 1,502,200	\$ 13,276,150
Construction	1,400	1,300	2,700	\$ 9,855	\$13,740,000	\$ 12,870,000	\$ 26,610,000	1,633	1,528	3,161	\$11,962	\$ 19,513,600	\$ 18,299,800	\$ 37,813,400
Manufacturing	1,295	725	2,202	\$ 6,835	\$ 8,822,000	\$ 4,986,000	\$ 13,808,000	1,515	845	2,360	\$ 8,280	\$ 12,516,320	\$ 7,024,620	\$ 19,540,940
Trans., Comm. & Utilities	510	2,005	2,515	\$ 8,476	\$ 4,322,000	\$ 16,996,000	\$ 21,318,000	570	2,275	2,845	\$ 9,643	\$ 5,447,500	\$ 21,989,430	\$ 27,436,930
Wholesale and Retail Trade	1,375	4,850	6,225	\$ 5,438	\$ 7,462,500	\$ 26,392,500	\$ 33,855,000	1,995	5,770	7,765	\$ 6,573	\$ 13,089,840	\$ 37,954,590	\$ 51,044,430
Services	1,310	3,000	4,310	\$ 5,987	\$ 7,865,000	\$ 17,940,000	\$ 25,805,000	1,885	3,570	5,455	\$ 7,299	\$ 13,672,525	\$ 25,766,450	\$ 39,438,975
Health Services	235	2,185	2,420	\$ 6,314	\$ 1,490,000	\$ 13,790,000	\$ 15,280,000	280	2,565	2,845	\$ 7,639	\$ 2,147,950	\$ 19,586,100	\$ 21,734,050
Education	530	2,220	2,750	\$ 7,040	\$ 3,725,000	\$ 15,635,000	\$ 19,360,000	675	2,525	3,200	\$ 8,491	\$ 5,716,100	\$ 21,456,850	\$ 27,172,950
Welfare and Misc. Professions	80	1,085	1,165	\$ 9,309	\$ 740,000	\$ 10,105,000	\$ 10,845,000	90	1,285	1,375	\$11,275	\$ 1,004,650	\$ 14,498,550	\$ 15,503,200
Public Adm.	520	940	1,460	\$ 6,808	\$ 3,630,000	\$ 6,310,000	\$ 9,940,000	610	1,095	1,705	\$ 8,268	\$ 5,165,950	\$ 8,932,475	\$ 14,098,425
Property Income and Net Transfer Payments														
TOTAL EMPLOYMENT	9,985	18,625	28,610					12,003	21,764	33,767			\$ 28,514,345	\$ 57,028,690
TOTAL INCOME					\$94,700,600	\$147,706,600	\$242,407,200					\$135,097,855	\$207,074,285	\$342,172,140

Source: Gilmore, 1973, page 9.

#### 4. Mining and Manufacturing

Some development is forecasted for the sectors of mining and manufacturing by using the multiplier projections. There will be some increase in coal mining activity in Garfield County. Mesa and Rio Blanco Counties will experience only slight mining development if oil production declines in Rio Blanco County. Mesa County is expected to develop significantly in the manufacturing sector as a result of its attractiveness to outside developers on the basis of location, labor force availability and living conditions. Relatively little manufacturing growth is foreseen for Rio Blanco County.





---

CHAPTER V

POPULATION

---



## CHAPTER V      POPULATION

### A.    Introduction and Summary

Set forth in this chapter are population characteristics describing the residents of Garfield, Mesa and Rio Blanco Counties. The chapter considers three time periods: pre-1970, primarily the period 1960 to 1970, 1970 to 1975 and 1975 to 1985. Much detailed data exists in the U. S. Census of Population for the period 1960 to 1970. Less data is available for the period from 1970 to the present, and 1975 to 1985; however, some information is available for these periods from State agencies and local planning staffs.

Available population estimates show that Garfield and Mesa Counties are growing at an estimated average annual rate of 2.85 percent and 1.30 percent, respectively. This is a slightly slower rate than initial projections developed by the State of Colorado had indicated. However, the population in Rio Blanco County is increasing at an estimated current annual rate of 1.84 percent reversing its population decline during the seventies. The three county region is expected to continue growing at a rate of about two percent per year without growth induced by rapid industrialization.

The three county region is still highly rural with about 52 percent of the population of Mesa County and 72 percent in Garfield County living in rural areas. Rio Blanco County has no urban areas by definition. In 1970, Meeker had one-third of the population of Rio Blanco County with 1,597 people, and Rifle had about 15 percent of the population in Garfield County with 2,150 people. Based on these estimates, Meeker has grown approximately 35 percent since 1970 and Rifle has grown about 28 percent since that time.

Little ethnic diversity exists in the three counties which are predominantly White, although approximately one percent of Mesa County's residents were Spanish American in 1970. Slightly over 50 percent of the residents of the three counties were born in Colorado and the median age of persons in the three counties in 1970 ranged from 26.9 in Rio Blanco County to 30.2 in Mesa County.

The educational level for the region in 1970 was close to the State average in median school years completed. Residents of the State as a whole had a median of 12.4 school years completed as compared with the three county average of 12.3 median school years completed.

All three counties and the State grew faster from immigration than from natural increases in 1974. Growth is expected to occur at a rate of two to three percent for the region during the next several years. One projection calculates that growth will occur at a rate of five percent per year after 1977 without significant industrial development in the region.

## B. Current Population Size

The populations of Rio Blanco, Garfield and Mesa Counties in 1970 were 4,842, 14,821 and 53,374, respectively. The total population of the three county region was 74,037 in 1970, as shown in Table V-1. The information in Table V-1 summarizes population size, number of families, number of households and number of persons per household for each of the counties in 1970. Mesa and Garfield counties had a slightly lower average number of persons per household than did the State as a whole, while the figure for Rio Blanco County was somewhat higher.

The population in the three counties on July 1, 1974 was estimated<sup>1</sup> to be 5,200 for Rio Blanco; 16,500 for Garfield; and 57,200 for Mesa (Table V-2). The planning office of Mesa County estimates the county's current population to be 61,500. Another set of figures prepared by the Division of Business Research at the University of Colorado estimated Rio Blanco County's population between 5,454 and 5,910 and Garfield County's population between 17,311 and 18,926 on October 1, 1975. Mesa County's population by this same method was estimated between 58,355 and 64,482 on October 1, 1975.<sup>2</sup>

The 1960 and 1970 population and current estimates for several key towns in the three county region are given in Table V-3. Clearly, each town has grown since 1970.

Tables V-4 and 5 show density per square mile and the percent of the population living in urban areas in the three counties in 1960 and 1970. Although there is significant variation in total population between the three counties, they are very similar in terms of total land area. Mesa County encompassed 3,303 square miles, as compared to 3,263 for Rio Blanco and 2,997 for Garfield. The population density, measured in terms of the number of residents per square mile, varied from a high of 16.5 in Mesa County to 4.9 in Garfield County and 1.5 in Rio Blanco County in 1970 (see Table V-4). The concentration of persons per square mile increased in Mesa and Garfield between the two censuses, while the concentration decreased in Rio Blanco. The three county area was still largely rural in 1970, and even the high estimates of population in 1975 would not significantly change the rural character of the three counties. For example, even Grand Junction had only 37.1 percent of Mesa County's population in 1970 (Table V-6). The population of the towns listed remained fairly

---

1. The population figures presented in the United States Census are considered authoritative. Other figures must be considered as estimates. Estimates may vary greatly according to the methods used for counting the population. It should be noted also that the census, itself, is based upon a five percent margin of error. A mid-decade census is taken revising some of the earlier figures. Unfortunately, this information was not available at this writing.

2. Office of the Governor of Colorado, IMPACT, 1974, Pgs. VI85-VI90.

Table V-1

POPULATION, FAMILIES, HOUSEHOLDS AND PERSONS PER HOUSEHOLD  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1970)

County	Population	Families	Households	Persons/ Households
Garfield	14,821	4,156	4,923	2.98
Mesa	54,374	13,973	17,640	2.97
Rio Blanco	4,842	1,285	1,474	3.22
Colorado	2,207,259	547,165	690,928	3.08

Source: U.S. Bureau of the Census, Census of Population, 1970.

Table V-2

POPULATION OF GARFIELD, MESA AND RIO BLANCO COUNTIES  
AND THE STATE OF COLORADO  
(1970, 1973, 1974)

County	1974	1973	1970(a)
Garfield	16,500	16,400	14,821
Mesa	57,200	57,500	54,374
Rio Blanco	5,200	5,000	4,842
Colorado	2,496,000	2,468,000	2,207,259

Notes: (a) The 1970 figures are official census calculations. The 1973 and 1974 figures are estimates.

Source: U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1975.

Table V-3  
POPULATION OF SELECTED COMMUNITIES IN REGION  
(1960, 1970, 1974, 1975)<sup>(a)</sup>

Town	1960	1970	1974	1975
Glenwood Springs	3,637	4,106	4,646	4,900
Grand Junction	18,694	20,170	354	27,000
Grand Valley	245	270	26,400	325
Meeker	1,655	1,597	2,000	2,150
Rangely	1,464	1,591	1,725	1,785
Rifle	2,135	2,150	2,403	2,750

Notes: (a) The population counts shown for 1960 and 1970 are based on official census calculations. The figures given for 1974 and 1975 are estimates.

Source: McDowell-Smith and Associates, 1975.

Table V-4  
POPULATION DENSITY PER SQUARE MILE IN GARFIELD, MESA  
AND RIO BLANCO COUNTIES  
(1960 and 1970)

	Garfield	Mesa	Rio Blanco
1960	4.0	15.4	1.6
1970	4.9	16.5	1.5
Area (Square Miles)	2,996	3,301	3,263

Source: Colorado Population Trends, Winter, 1972.

Table V-5  
PERCENT OF THE POPULATION LIVING IN URBAN AREAS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960 and 1970)

Year	Garfield	Mesa	Rio Blanco (a)	State
1960	30.3	46.6	—	73.7
1970	27.7	47.8	— (a)	78.5

Notes: (a) There are presently no urban areas in Rio Blanco County.

Source: Colorado Population Trends, Fall, 1972.



Table V-6  
PERCENT OF THE TOTAL COUNTY POPULATION LIVING  
IN SELECTED TOWNS IN REGION 22  
(1960 - 1970)

Town(a)	1970	1960
Glenwood Springs (Garfield) <sup>1</sup>	28.1%	30.3%
Grand Junction (Mesa) <sup>1</sup>	37.1	37.0
Grand Valley (Garfield) <sup>2</sup>	1.8	2.0
Meeker (Rio Blanco) <sup>1</sup>	33.0	32.1
Rangely (Rio Blanco) <sup>2</sup>	32.9	28.4
Rifle (Garfield) <sup>2</sup>	14.5	17.8

Notes: (a) Glenwood Springs, Grand Junction and Meeker are considered the major towns in their respective counties.

Sources: 1. Colorado Population Trends, Winter, 1972.  
2. Adapted from U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1975 and McDowell Smith and Associates, 1975.

proportional in percent of their county's population between 1960 and 1970. Meeker, for example, had only nine percent more of Rio Blanco County's population in 1970. Meanwhile, Rifle had 3.3 percent less of Garfield County's population in 1970.

### C. Selected Demographic Characteristics

#### 1. Ethnicity and In-Migration

The three county region showed little variation in ethnic makeup in 1970. Table V-7 indicates that Mesa County had roughly nine percent Spanish Americans in the population, which falls well below the proportion of Spanish Americans in the State population. Overall, the ethnic composition of the area is classified as predominantly White. Data in Table V-8 shows national and regional origin of the populations living in the three counties in 1970. The table indicates that between 51 and 53 percent of the persons living in the three counties were native Coloradans in 1970. The table shows also that most of the residents of the three counties in 1970 were born in the United States.

#### 2. Education

The median years of education increased in all three counties between 1960 and 1970. The median years of education for persons in the three counties were roughly the same as those for the State as a whole in 1970. The percent of the population over twenty-five who had graduated from high school was slightly greater than the State average for Rio Blanco County and slightly less than the State average for Garfield and Mesa Counties (Table V-9).

#### 3. Age

The age distribution for persons in the three counties was also similar to the distribution for the State in 1970 (Table V-10). However, Garfield and Mesa Counties had more persons than the State over sixty-five, whereas Rio Blanco had less persons in that age category. The median age in 1970 was 26.9 in Rio Blanco County, 30.0 in Garfield County and 30.2 in Mesa County. The median age of the population in the three counties was slightly higher than the State median age of 26.2.

### D. Population Dynamics

#### 1. Trends

Mesa and Garfield Counties have shown a steady increase in population growth since 1930 as indicated in Table V-11. In contrast, Rio Blanco County has experienced two periods of growth and two periods of population decline in the census years between 1930 and 1970.

The rates of change between 1960 and 1970 were 23 percent for Garfield County, 7 percent for Mesa and a decline of 6 percent for Rio Blanco County (Table V-12). Thus, Garfield County approached the 25.8 percent growth rate of Colorado during the decade. Garfield and Mesa Counties have continued to grow between 1970 and 1974. Rio Blanco County reversed its trend

Table V-7

ETHNIC COMPOSITION OF THE POPULATION OF GARFIELD, MESA  
AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1970)

Ethnic Group	Garfield	Mesa	Rio Blanco	Colorado
White	94.49% (14,005)	89.88% (48,874)	95.95% (4,646)	82.7% (1,825,885)
Spanish-American	5.05 (748)	9.10 (4,967)	2.95 (143)	13.0 (286,467)
Black	.07 (11)	.36 (197)	.23 (11)	3.0 (66,411)
Indian	.11 (15)	.23 (126)	.12 (6)	0.4 (8,836)
Oriental	.08 (12)	.18 (98)	.33 (16)	0.5 (10,388)
All others	—	—	—	0.4 (9,272)

Source: Colorado Population Trends, Summer, 1972.

Table V-8  
NATIVITY AND STATE OF BIRTH OF PERSONS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970)

	Garfield	Mesa	Rio Blanco
Total Population	14,821	54,374	4,842
Native of Native Parentage	13,311	49,744	4,519
Native of Foreign or Mixed Parentage	1,196	3,824	276
Foreign Born	314	806	47
Total Native Population	14,535	53,517	4,798
Born in State of Residence	7,865	28,472	2,503
Born in Different State	6,066	22,871	2,144
(Percentage of Total)	41.7	42.7	44.7
Northeast	442	1,018	91
Northcentral	2,957	10,373	771
South	1,142	4,992	539
West	1,525	6,488	743
Born Abroad, At Sea, etc.	64	278	11
State of Birth Not Reported	540	1,896	148

Source: U.S. Bureau of the Census, U.S. Census of the Population, 1970.

Table V-9

EDUCATIONAL ATTAINMENT OF PERSONS IN GARFIELD, MESA AND  
RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1960 and 1970)

	MEDIAN YEARS		PERCENT OF POPULATION 25 YEARS AND OLDER, 1970			
	1970	1960	HIGH SCHOOL GRADUATES TOTAL	MALE	FEMALE	FOUR OR MORE YEARS COLLEGE
Garfield	12.2	11.3	58.7 %	53.9 %	63.3 %	10.0 %
Mesa	12.3	12.0	59.1	57.1	60.9	10.5
Rio Blanco	12.4	12.1	65.7	66.5	64.8	9.3
Colorado	12.4	12.1	63.9	62.9	64.8	14.3

Source: Colorado Population Trends, Fall, 1972.

Table V-10

AGE DISTRIBUTION OF THE POPULATION OF GARFIELD, MESA  
AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1970)

Population	Colorado	Garfield	Mesa	Rio Blanco
Total number of persons	2,207,259	14,821	54,374	4,842
Under 18 years	35.1%	33.9%	33.6%	35.3%
18 to 64 years	56.4	54.8	54.4	56.5
65 years and over	8.5	11.3	12.0	8.2
Medicare age	26.2	30.0	30.2	26.9

Source: U.S. Bureau of the Census, Census of Population, 1970.

Table V-11  
POPULATION GROWTH IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
AND THE STATE OF COLORADO  
(1930 - 1970)

Year	Rio Blanco <sup>1</sup>	Mesa <sup>2</sup>	Garfield <sup>2</sup>	State of Colorado <sup>1</sup>
1930	2,980	25,908	9,975	1,035,791
1940	2,943	33,791	10,560	1,123,296
1950	4,719	38,974	11,625	1,325,089
1960	5,150	50,715	12,017	1,753,947
1970	4,842	54,374	14,821	2,207,259

Sources: 1. U.S. Census, Census of Population, 1940 - 1970.

2. Wengert, 1973, pages I-10 and II-11.

Table V-12

POPULATION GROWTH IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
AND THE STATE OF COLORADO  
(Percent Change)  
(1950 - 1960, 1960 - 1970, 1970 - 1974)

Area	1950 <sup>1</sup>	1960 <sup>1</sup>	1970 <sup>2</sup>	Provisional Estimate <sup>2</sup>	% Change <sup>3</sup>	% Change <sup>2</sup>	% Change <sup>2</sup>
				1974	1950-1960	1960-1970	1970-1974
Garfield	11,625	12,017	14,821	16,500	3.4%	23.3%	11.4%
Mesa	38,974	50,715	54,374	57,200	30.1	7.2	5.2
Rio Blanco	4,719	5,150	4,842	5,200	9.1	- 6.0	7.4
Colorado	1,325,089	1,753,947	2,207,259	2,496,000	32.4	25.8	13.1

- Sources:
1. U.S. Bureau of the Census, Census of Population, 1960, 1950.
  2. U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1975.
  3. Wengert, 1973, pages I-10, II-10, III-9.

Table V-13

GROWTH OF SELECTED TOWNS IN REGION 22  
(1960 - 1970)

Town	1960	1970	Percent Change
Glenwood Springs <sup>1</sup>	3,637	4,106	12.9%
Grand Junction <sup>1</sup>	18,694	20,170	7.9
Grand Valley <sup>2</sup>	245	270	10.2
Meeker <sup>1</sup>	1,655	1,597	- 3.5
Rangely <sup>2</sup>	1,464	1,591	8.7
Rifle <sup>2</sup>	2,135	2,150	.7

- Source:
1. Colorado Population Trends, Winter, 1972.
  2. Adapted from McDowell-Smith and Associates, 1975.



of population decline and showed a 7.4 percent increase according to 1975 estimates. During the period 1970 to 1974, the State continued to grow at about the same rate as it grew between 1960 and 1970. However, this growth rate was a faster rate than that of the three counties. Garfield County approached the rate of growth for the State. If estimated current rates of growth hold until 1980, Mesa and Rio Blanco counties may grow at rates significantly higher than their rates of growth between 1960 and 1970. Rio Blanco County, in particular, has increased at a substantial rate, from a decline in population to a seven percent growth rate.

The growth of Garfield County can be explained, in part, by the expansion of construction and services related to tourism in the county. The increasing trend toward a tourism-based economy for Garfield is reasonable considering Garfield's own recreational resources and its proximity to Aspen. Table V-13 shows that 12.4 percent of the people of Garfield County live in the county but work outside of the county, whereas only 3.3 percent of Mesa's residents and 2.4 percent of Rio Blanco's residents work outside of their respective counties. Because of Garfield County's relationship to Pitkin County and because of its own growing tourism industry, high rates of growth can be expected to continue there.

The recent growth of Mesa County is due to expansion of government services, health professions, the housing industry and to an influx of retired persons. Rio Blanco County's growth is largely due to the expansion of oil fields around Rangely and government services in the Meeker area.

The major towns were responsible for only part of the population change in the counties between 1960 and 1970. Glenwood Springs, for example, grew by 423 persons while Garfield County grew by 2,804 persons. The growth figures for the major towns indicate that much of the growth or decline in population took place in areas outside the major towns (Table V-14). Growth in Rifle constituted only .5 percent of Garfield County's growth. A decline in Meeker's population represented approximately 19 percent of Rio Blanco County's loss while Rangely actually grew between 1960 and 1970.

Table V-15 indicates that during the decade from 1960 to 1970 as many persons had migrated from Rio Blanco County as had been born in the county. Mesa County also lost some population due to out-migration. However, the number of births was almost double the number of deaths, thus resulting in a significant rate of growth for Mesa County.

Table V-16 shows that all three counties and the State as a whole grew faster from in-migration than from natural increases during the period 1970 to 1974. Garfield County continues to grow at rates of in-migration roughly equal to the State's rate of growth from in-migration. Rio Blanco and Mesa Counties are reversing their trends of out-migration to significant rates of in-migration.

#### F. Projected Rates of Growth

This section presents three sets of projections of growth for the three county area without significant industrial development. Projections

Table V-14

PERCENT OF THE POPULATION WORKING OUTSIDE THE COUNTY OF RESIDENCE  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970)

Garfield	Mesa	Rio Blanco
12.4%	3.3%	2.4%

Source: Colorado Population Trends, Fall, 1972.

Table V-15

BIRTHS, DEATHS AND NET MIGRATION IN GARFIELD, MESA AND  
RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1960 - 1970)

	Garfield	Mesa	Rio Blanco	State
Births	2,427	9,007	1,009	400,812
Deaths	1,321	5,019	388	162,991
Net Migration	1,698	-329	-1,018	215,491
Percent Change in Population, 1960-1970	23.3%	7.2%	- 6.0%	25.8%
Percent Net Migration of 1960 Population	14.1%	-0.6%	-19.8%	12.3%

Source: Colorado Population Trends, Fall, 1972.

Table V-16

BIRTHS, DEATHS AND NET MIGRATION IN GARFIELD, MESA AND RIO BLANCO  
COUNTIES AND THE STATE OF COLORADO  
(1970 - 1974)

	Colorado	Garfield	Mesa	Rio Blanco
Births	168,000	1,100	3,600	300
Deaths	77,000	600	2,500	200
Net Migration	196,000	1,200	1,800	200
Percent Change, 1970 to 1974	13.1%	11.4%	5.2%	7.4%
Net Change, 1970 to 1974	289,000	1,700	2,800	400
Percent of Population Growth Resulting from Net Migration	8.9%	8.2%	3.3%	4.4%

Source: U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1975.

can be based on past trends, comparisons with areas growing at similar rates or on calculations of factors such as survival rates and rates of net migration. However, projections by different agencies generally employ different methods and often result in significantly different figures.

An initial set of projections was done for the State of Colorado in 1973 by David Monarchi at the Business Research Division of the University of Colorado. The Business Research Division manages the State's special population reports in conjunction with the United States Census. A second set of projections was developed in 1973 by THK Associates for the Oil Shale Regional Planning Commission as part of their first joint government-industry analysis of anticipated socio-economic impacts associated with oil shale development. A third set of projections was updated in 1974 by the Business Research Division of the University of Colorado for the State's Impact Study.

Assuming that present trends of economic development in the three county region continue, the State Planning Office estimated, in 1973, that the population would grow at a rate of approximately three percent per year for the next ten years. Garfield County was expected to grow approximately three to four percent per year, while Mesa County would grow at two percent and Rio Blanco County's population would decline by one to three percent per year (see Table V-17). The range of annual growth rates projected by the State (summarized in Table V-17) was derived from a number of different State projections using various extrapolation formulas.

Rather than relying on extrapolations of prevailing population trends, Gilmore and Duff forecast population growth for the three county region based on an analysis of the economy (Table V-17). Their approach provided a more sensitive reflection of the anticipated changes and continuities in the local economy than the State's estimate which relied on a large-scale model of trends. On the other hand, an analysis of local economic conditions yields projections only as accurate as the assumptions about future economic conditions in the area.

Gilmore and Duff basically argued that rapid growth of tourism in the region and moderate growth of manufacturing and services in Mesa County suggest a higher rate of population growth than that projected by the State on the basis of past trends. They projected relative stability rather than decline in Rio Blanco County and a 2.5 percent annual growth rate for Mesa County in comparison to the State projection of 2 percent. They also projected a five percent annual growth rate for Garfield County due to tourism including expansion of its own recreational facilities and continued growth of tourist related construction and services in Pitkin County.

Their estimates for all three counties resulted in an overall estimate of annual growth for the region of three to five percent. This is significantly higher than the State's forecasts. This projection is primarily dependent on continued rapid growth of the tourist industry.

Table V-17 also provides an estimated current rate of growth for the three counties based on recent census estimates for the period 1970 to 1974

Table V-17

PROJECTED ANNUAL POPULATION GROWTH RATES WITHOUT OIL SHALE  
DEVELOPMENT FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
AND THE REGION  
(1970 - 1980)

Source	Garfield	Mesa	Rio Blanco	Region
State Projection <sup>1</sup>	3-4%	2.0%	-(1-3)%	2-3%
Gilmore and Duff <sup>2</sup> Projection	5%	2.5%	Level	3%
Current Annual Estimated <sup>3</sup> Growth Rate		Rate		
April 1, 1970 - July 1, 1974	2.85%	1.30%	1.85%	2%

Sources: The State projections are adapted from sources 1a through 1d.

1a. Colorado Population Trends, Winter, 1973.

1b. Colorado Population Trends, Summer, 1973.

1c. U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1973.

1d. Colorado County Population Estimates, 1974, pages 29-30.

2. Gilmore, 1973, page 5.

3. U.S. Bureau of the Census, Federal-State Cooperative Program for Population Estimates, 1975.

as a basis of comparison with other projections. It should be noted that the census estimates show an annual growth somewhat lower than the projected rates for Garfield and Mesa Counties and substantially higher than the projected rates of growth for Rio Blanco County.

Table V-18 provides projected population figures for each of the three counties through 1980 based on the 1973 State estimate of a three percent annual growth rate. Table V-19 presents the projected population for the three county region based on the 1973 THK-Gilmore and Duff estimate of three and five percent annual growth rates. As the table shows, Gilmore and Duff suggested that by approximately 1977 an expanding tourist industry and a highway work force could push the growth rate from three to five percent.

Table V-20 shows 1974 revised State of Colorado population projections for the period 1975 to 1985 as given in the State's Impact Study. It is interesting to compare the figures for 1980 from each of the three sources. The initial State Planning Office figures total 87,278. The THK figures show a range from 99,100 to 104,900. The more recent State Impact Projections for October 1, 1980 give a population range between 87,183 and 97,643 for the three county region, without any significant energy development.

The projections are fairly close for growth averaged over the region. All of the projections indicate that population growth will increase even without oil shale development. Growth is expected to result largely from an expansion of the tourist and services sectors of the economy, but the most recent figures indicate that government services, health services and other energy development projects, namely; coal and oil, are beginning to affect the area's growth.

These forecasts suggest that the economic and population outlook for the three county region is positive even without oil shale development. However, growth is likely to occur most rapidly in Garfield County and at a more moderate pace in Mesa and Rio Blanco Counties in the absence of oil shale development.

Just as the three counties will benefit to rather different degrees from economic growth in the region, they also will experience the impacts of population growth differently. If the forecasts are correct, the population of the region could increase to a population level between 110,000 and 130,000 people by 1985. At a five percent growth rate after 1977, the population of the region would almost double by 1985. It can be concluded that such a growth rate would, in itself, necessitate a strong planning and growth-management program if adequate housing and municipal and human services are to be made available to the incoming populations. Although much of this growth would be concentrated in the urban centers of the counties, especially Grand Junction and Glenwood Springs, all of the region will require greatly increased efforts at planning and management if community development is to be realistically carried out.

Table V-18

PROJECTED POPULATION GROWTH WITHOUT OIL SHALE DEVELOPMENT  
FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970 - 1980)

Year	Garfield	Mesa	Rio Blanco
1970	14,821	54,374	4,842
1971	15,260	55,397	4,696
1972	15,700	56,420	4,549
1973	16,139	57,444	4,403
1974	16,579	58,467	4,256
1975	17,018	59,490	4,110
1976	17,470	60,481	3,999
1977	17,922	61,472	3,888
1978	18,373	62,464	3,777
1979	18,825	63,455	3,666
1980	19,277	64,446	3,555

Source: Figures for 1971-1974 and 1976-1979 are extrapolations based on U.S. Bureau of the Census, Census of Population, 1970, and Colorado population trends, Summer, 1973.



Table V-19  
PROJECTED POPULATION GROWTH FOR THE THREE  
COUNTY REGION WITHOUT OIL SHALE DEVELOPMENT  
(1970 - 1980)

Year	3 Percent Annual Increase	5 Percent Annual Increase
1970	74,000	
1971	75,400	
1972	78,200	
1973	80,600	
1974	82,300	
1975	85,500	
1976	88,000	
1977	90,600	
1978	93,400	(a) 95,100
1979	96,200	99,000
1980	99,100	104,900
1981	102,000	110,100
1982	105,100	115,600
1983	108,300	121,400
1984	111,500	127,500
1985	114,800	133,900
1986	118,300	140,500
1987	121,900	147,600
1988	125,500	155,000
1989	129,300	162,700

Notes: (a) It is assumed that, after 1977, the population will increase at a rate of 5 percent per year. This will reflect a higher growth rate, which appears possible based on the assumptions described above.

Source: THK Associates, 1973, page 4.

Table V-20  
PROJECTED GROWTH WITHOUT OIL SHALE DEVELOPMENT IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES <sup>(a)</sup>  
(1975 - 1985)

	Garfield		Mesa		Rio Blanco	
	Low	High	Low	High	Low	High
10/1/75	17,311	18,926	58,355	64,482	5,454	5,910
10/1/80	18,672	20,747	62,747	70,543	5,764	6,353
10/1/85	20,496	23,208	68,978	79,105	6,262	7,047

Note: (a) The use of high and low figures in the study is explained in the following way:

In general, at least two ranges of numbers are desirable to afford proper presentation of any projection. The two ranges are usually created by small changes in one of the more important assumptions, and tend to emphasize the importance of assumptions, as well as the uncertainty associated with all projections. The final schedule of projections, therefore, provided for each area, a "low base" and "high base", and a "low impact" and a "high impact" projection. . . . The "high base" assumes a continuation of the relatively strong growth which Colorado has been experiencing. The "low base" assumes a degree of recession occurring in 1973 and somewhat slower growth thereafter. The recession is created by a reduction in contract construction for 1973, and a slightly reduced internal growth in the years following. The final period of the projections was established as 1975-1985. The Model, of course, must start from a Census year, in this case 1970. (p. V/65)

Source: 1. Office of the Governor, Oil Shale Planning and coordination, Impact, Volume V, December 1974, page V-85-90.



---

CHAPTER VI

GOVERNMENTAL STRUCTURE AND TAX BASE

---



## CHAPTER VI      GOVERNMENTAL STRUCTURE AND TAX BASE

### A.    Introduction and Summary

This chapter covers local government structures, public finances, and elements of local tax bases in Garfield, Mesa and Rio Blanco counties, and selected cities in these counties. The chapter identifies and examines the capabilities of local government and tax bases to manage rising governmental and service costs.

County and municipal government structures have changed little during recent years. Government employment has increased, as might be expected, due to growth in the area; but the organization of elected officials has remained much the same as given in the 1967 Census (Tables VI-1, 2). The local planning departments are the primary areas where significant increases in staff functions have been made.

A number of regional governmental bodies also have recently come into existence in the region. Most notable among these is the Colorado West Area Council of Governments (COG). The COG is made up of representatives from the 11th State Planning Region, including Garfield, Mesa, Moffat and Rio Blanco counties, and has a declared purpose to develop regional comprehensive planning programs. The COG consists of a professional staff of planners, economists, engineers and administrators. Its duty is to coordinate governmental activity in the four county region and to provide technical services that each county cannot afford to maintain separately. It also facilitates and processes federal grant applications and encourages standardization of planning and zoning regulations. However, zoning authority and planning policy determinations remain county functions.

Public budgets in the region have increased rapidly in the past few years. However, growth of revenues in the counties has kept pace with rising expenditures. In general, roads and bridges account for the largest county expenditures with public safety and roads and bridges requiring comparable funding at the municipal level. Intergovernmental revenues and property taxes are the largest revenue sources for the counties, while sales taxes make the greatest contribution to municipal governments.

In order to meet the ever rising costs of local services provided to the public, governments must be able to count on the continued expansion of the local tax base. The region is dependent upon two primary sources of tax revenue. They are county property tax and municipal sales tax. All indications are that both sources will continue to experience strong rates of growth. As lands in the region are zoned up to higher valued uses, assessed valuation increases and subsequently increases property tax revenues.

Business activity, such as retail and wholesale trade, has expanded enormously in all three counties thus providing more sales tax monies to towns and cities. The projected growth of trade, services, public

Table VI-1  
LOCAL GOVERNMENT EMPLOYMENT AND PAYROLLS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(October 1967)

Item	Garfield	Mesa	Rio Blanco
Employees	567	2,458	414
Full-Time Only	465	1,836	335
October Payroll (\$1,000)	228	926	144
Education (dollars)	158	651	72
Teachers Only (dollars)	125	452	57
Functions Other than Education	71	275	72
Average Earnings, Full-Time Employees			
Teachers	551	550	575
Others	389	425	341
Full-Time Equivalent Employment	490	1,931	355
Education	332	1,315	142
Teachers Only	227	820	98
Functions Other than Education	167	616	213
Highways	46	113	70
Public Welfare	8	39	2
Hospitals	—	—	65
Health	3	20	—
Police Protection	20	57	11
Fire Protection	—	38	—
Sewerage	5	9	4
Sanitation (other than sewerage)	9	25	3
Parks and Recreation	1	40	3
Natural Resources	—	43	—
Housing and Urban Renewal	—	—	—
Correction	1	12	1
Libraries	3	31	2
Financial Administration	10	47	10
General Control	35	62	23
Water Supply	6	45	3
Other Local Utilities	12	—	1
Other and Unallocable	8	35	15

Source: U.S. Bureau of the Census, Census of Governments, 1967.



Table VI-2  
NUMBER OF LOCAL GOVERNMENTS AND ELECTED OFFICIALS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1967)

GARFIELD COUNTY

Government Type	Number of Governments	Number of Elected Officials
County Government	1	12
Municipalities	6	43
School Districts	3	15
Special Districts	16	68
Total	26	138

MESA COUNTY

Government Type	Number of Governments	Number of Elected Officials
County Government	1	10
Municipalities	5	37
School Districts	4	20
Special Districts	30	93
Total	40	160

RIO BLANCO COUNTY

Government Type	Number of Governments	Number of Elected Officials
County Government	1	10
Municipalities	2	14
School Districts	2	12
Special Districts	6	21
Total	11	57

Source: U.S. Bureau of the Census, Census of Governments, 1967.

services and existing energy development sectors in the three counties, would ensure the continued contribution of sales taxes to the local tax base.

Personal income levels have improved significantly since 1970 thus indicating the continued ability of the taxpayer to afford the growing annual tax liability. In the future, local taxes will necessarily increase due to the greater demands for services created by population growth. The relative ease with which regional governments support these necessary expansions will be determined by the future strength of the tax base.

#### B. Government Structure

The organizational structure of counties in Colorado is specified by the State constitution. Article XIV of the Colorado Constitution establishes the organization and the officers of County government. In general, the basic organizational structure is the same throughout the state except for the City and County of Denver which has its organization established by City Charter pursuant to Article XX of the State Constitution. Since counties are by law considered to be administrative divisions of the State government they possess no inherent legislative, judicial or executive powers other than those delegated by the General Assembly. In practice, although counties have been grouped together in planning regions administered by councils of government, policy at the local level continues to be set by County governments.

The governing authority is shared by approximately ten elected officials. Generally, these include three county commissioners, a county clerk, a county treasurer, a county assessor, a county sheriff, a county coroner, a surveyor and a superintendent of schools. The District Attorney serves several counties.

General governing authority, including rule-making authority by means of resolutions, is vested in the three member board of County Commissioners. Counties are usually divided into three districts with one commissioner responsible for each district.

All county boards and authorities are appointed by the Board of County Commissioners. These usually include such bodies as the Library Board, County Airport Authority, Recreation Commission, Zoning Board of Adjustments and the Planning and Zoning Commission.

Municipalities in Colorado are divided into three categories based on population. These are: First Class Cities (greater than 70,000 persons), Second Class Cities (greater than 2,000 persons) and Towns (less than 2,000 persons).

In the three county region only Glenwood Springs, Grand Junction and Rifle are home rule cities. The remainder, including Meeker, are statutory towns. Home rule cities are granted the powers given municipal

governments under state statutes as well as authority to regulate matters of local and municipal interest. Home rule cities may also decide the structural organization of their city management. Home rule cities are often governed under a city council-manager system wherein a mayor is chosen from among the council members. These cities may also have city planning commissions primarily concerned with zoning. This city manager is generally the chief administrative officer with authority to appoint department heads.

Statutory towns traditionally were places with less than 2,000 residents. Recent constitutional change now allows all towns and cities to elect this home rule system. A statutory town has no authority to regulate matters not contained or implied by State Statutes concerning such towns. Statutory towns generally have a mayor and a town council.

The size of the county and municipal government staffs has not increased inordinately in recent years although overall population growth and the resultant expansion of services has necessitated some additional staffing. Within the past decade, however, one important new department has evolved at the local level -- the planning department. Each county now has at least one full-time professional planner and a supporting staff. The planner reports to the County Planning Commission which, in turn, reports to the County Commissioners.

#### C. Revenues

County and municipal revenues, as illustrated in Tables VI-3, 4 and 5 come primarily from two sources, general property taxes and inter-governmental revenue. In all three counties this latter source was the largest contributor of revenues in 1973. Within this category state revenues, mainly derived from the Highway Users Tax and Welfare, constitute the major portion of the total intergovernmental revenue. Other significant contributors to County revenue are specific ownership taxes and charges for current services. (See the Glowwary of Financial Accounts at the end of this chapter for details.)

The largest county expenditures are generally for public works and, more specifically, for roads and highways (Tables VI-6, 7, 8). In Mesa County, however, public welfare accounts for the greatest expense. Other major expenditures are for public safety and general governmental costs. At the municipal level public safety accounts for a much higher percentage of total expenditures. This trend is indicative of the obligation of the counties for highway and street maintenance, as compared to that of the municipalities for public safety and sanitation.

The overall trend, as illustrated by the county budgets for 1970 and 1973, shows a sharp increase in both total expenditures and total revenues. The increase is considerably less dramatic in Rio Blanco County than in Garfield and Mesa counties. Growth of revenues in the region has kept pace with increased expenditures very well. In fact, in Garfield and Mesa counties revenues have increased proportionately more than expenditures. This pattern might be indicative of the emergence of

Table VI-3  
COUNTY GENERAL GOVERNMENT FINANCES IN GARFIELD, MESA  
AND RIO BLANCO COUNTIES  
(1970)  
(Revenues)

Revenue Source	Garfield	Mesa	Rio Blanco
Property Taxes	\$ 826,800	\$1,642,700	\$ 742,100
General Property	739,500	1,479,100	711,100
Specific Ownership	87,300	163,600	31,000
Sales Taxes	0	0	0
Licenses and Permits	900	31,800	1,300
Fees, Fines, and Forfeits	0	14,000	1,100
Revenue from Other Governments	777,800	2,812,700	567,900
Federal	77,100	77,800	134,500
State	661,100	2,732,600	415,400
Highway Users'	456,600	877,200	363,700
Welfare	185,000	1,713,900	41,700
Other State	19,500	141,500	10,000
All Other NEC	39,600	2,300	18,000
Charges for Current Services	64,800	351,100	276,700
Interest, Rentals, and Sales	29,500	79,200	4,100
Miscellaneous and All Other	18,100	45,500	3,700
TOTAL REVENUES	1,717,900	4,977,000	1,596,900

Source: Colorado Division of Local Governments, 1970, pages 125, 195, 249.

Table VI-4  
COUNTY GENERAL GOVERNMENT FINANCES IN GARFIELD, MESA  
AND RIO BLANCO COUNTIES  
(1973)  
(Revenues)

	Garfield	Mesa	Rio Blanco
Taxes	\$ 854,800	\$2,151,300	\$ 629,700
General Property	734,100	1,928,300	596,700
Specific Ownership	103,400	223,000	31,200
Sales	NA	NA	NA
Other	17,300	NA	1,800
Licenses and Permits	\$ 7,800	\$ 217,100	\$ 100
Intergovernmental Revenue	\$1,256,800	\$5,533,000	\$ 900,800
Federal	276,700	1,166,800	184,000
General Revenue Sharing	176,300	983,700	116,900
Other	100,400	183,100	167,100
State	966,200	4,252,300	616,800
Highway Users Tax	607,100	1,188,400	528,000
Welfare	292,400	2,642,700	76,900
Cigarette Tax	NA	NA	NA
Motor Vehicle Reg. Fee	26,100	NA	7,300
Other	40,600	421,200	5,200
Other Units	13,900	113,900	NA
Charges for Current Services	\$ 104,900	\$ 514,500	\$ 92,500
Fines and Forfeits	NA	NA	NA
Miscellaneous	\$ 60,700	\$ 179,600	\$ 60,000
Transfers from Enterprise Activities	NA	NA	NA
Total Revenue	\$2,285,000	\$8,595,500	\$1,683,100

Source: Colorado Division of Local Governments, 1973, pages 69, 108, 137.

Table VI-5  
 SELECTED MUNICIPAL GOVERNMENT FINANCES IN GLENWOOD SPRINGS, RIFLE,  
 GRAND JUNCTION AND MEEKER  
 (1973)  
 (Revenues)

	Glenwood Springs	Rifle	Grand Junction	Meeker
Taxes	\$400,100	133,200	1,876,200	103,500
General Property	76,400	56,600	646,500	52,300
Specific Ownership	21,100	5,300	61,800	3,100
General Sales and Use	285,200	62,000	1,034,100	47,000
Employment Occupation	NA	NA	NA	NA
Franchise	17,400	9,200	132,200	1,100
Other	NA	100	1,600	NA
Licenses and Permits	\$ 30,500	5,300	75,500	600
Intergovernmental Revenue	\$176,100	61,500	931,200	43,300
Federal	90,100	25,900	457,800	7,000
General Revenue Sharing	90,100	25,900	457,800	7,000
Other	NA	NA	NA	NA
State	62,400	26,200	329,300	21,700
Highway Users Tax	23,600	11,600	111,900	10,000
Cigarette Tax	38,800	8,600	137,600	6,700
Motor Vehicle Reg.	NA	6,000	58,500	5,000
Other	NA	NA	21,300	NA
Other Units	23,600	9,400	144,100	14,600
Charges for Current Services	\$ 75,400	34,300	617,700	7,200
General Government	NA	NA	NA	NA
Public Safety	NA	NA	4,700	2,700
Highways and Streets	21,000	4,900	122,200	NA
Solid Waste Services	44,700	22,100	305,600	NA
Health	9,700	7,300	50,400	NA
Culture-Recreation	NA	NA	133,500	4,500
Other	NA	NA	1,300	NA
Fines and Forfeits	\$ 10,700	8,100	110,300	2,400
Miscellaneous Revenue	\$ 34,900	8,400	184,900	1,900
Transfers from Enterprise Activities	\$177,700	NA	121,100	NA
Total Revenue	\$905,400	250,800	3,916,900	158,900

Source: Colorado Division of Local Governments, 1973, pages 71, 72, 197, 250.

Table VI-6  
COUNTY GENERAL GOVERNMENT FINANCES IN GARFIELD,  
MESA AND RIO BLANCO COUNTIES  
(1970)  
(Expenditures)

	Garfield	Mesa	Rio Blanco
General Administration	\$ 229,900	\$ 492,200	\$ 154,500
Commissioners	21,100	26,600	24,400
Clerk	45,000	163,200	37,400
Treasurer	35,100	120,300	44,700
Assessor	94,900	109,000	28,200
All Other NEC	33,800	73,100	19,800
Highways	644,300	1,128,900	286,000
Public Safety	83,900	212,100	60,900
Sheriff	52,200	192,500	58,300
All Other NEC	31,700	19,600	2,600
Justice	17,600	68,900	11,100
District Court	0	0	100
County Court	0	14,400	300
District Attorney	17,600	54,500	10,700
All Other NEC	0	0	0
Planning and Zoning	2,800	18,900	1,300
Health and Hospitals	52,700	300,100	255,100
Airport	5,300	0	6,400
Public Welfare	234,800	2,196,400	65,100
Parks and Recreation	120,600	180,700	54,900
Public Buildings	21,600	37,700	25,500
Employees Retirement	0	100	0
Misc. and Unclassified			
Expenditures	31,500	52,200	72,600
Capital Outlay	105,000	298,400	498,400
<b>TOTAL GENERAL EXPENDITURES</b>	<b>1,560,000</b>	<b>4,986,600</b>	<b>1,491,800</b>
Outstanding General Debt	0	0	0
Debt Service	0	0	0

Source: Colorado Division of Local Governments, 1970, pages 126, 196, 250.



Table VI-7  
COUNTY GENERAL GOVERNMENT FINANCES IN GARFIELD,  
MESA AND RIO BLANCO COUNTIES  
(1973)  
(Expenditures)

	Garfield	Mesa	Rio Blanco
General Government	\$ 330,100	\$ 655,300	\$ 213,700
Commissioners	36,500	35,100	33,400
Administration	10,400	104,700	13,700
Clerk and Recorder	59,700	175,100	46,900
Election	NA	NA	1,400
Treasurer	35,000	68,800	28,100
Assessor	91,100	125,600	39,400
Planning and Zoning	22,600	63,100	19,100
Data Processing	NA	42,500	6,800
Plant Maint. and Ops.	42,700	40,400	24,900
Other	32,100	NA	NA
Judicial	36,400	94,100	16,800
Public Safety	120,200	358,000	71,600
Law Enforcement	67,600	309,000	69,200
Fire	2,200	NA	600
Other	50,400	49,000	1,800
Public Works	972,400	1,852,100	730,800
Roads and Highways	942,400	1,337,800	730,800
Solid Waste Services	30,000	61,000	NA
Other	NA	453,300	NA
Health	62,400	357,100	18,000
Public Welfare	389,800	3,064,100	99,400
Administration	94,800	573,500	29,300
ADC	193,600	1,515,600	55,500
Other	101,400	975,000	14,600
Culture-Recreation	161,500	332,000	28,100
Recreations	21,200	40,100	1,800
Parks	NA	100	NA
Library	81,400	258,200	NA
Fair	37,500	6,400	7,500
Extension Service	21,400	27,200	15,400
Other	NA	NA	3,400
Miscellaneous	103,100	130,800	168,800
Total Current Expenditures	2,175,900	6,843,500	1,347,200
Transfers to Enterprise			
Activities and Governments	31,100	51,200	75,600
Capital Outlay	30,700	894,800	199,300
Debt Service	NA	NA	NA
Principal			
Interest			

Source: Colorado Division of Local Government, 1973, pages 69, 108, 137.

Table VI-8  
SELECTED MUNICIPAL GOVERNMENT FINANCES IN GLENWOOD SPRINGS,  
RIFLE, GRAND JUNCTION AND MEEKER  
(1973)  
(Expenditures)

	Glenwood Springs	Rifle	Grand Jct.	Meeker
General Government	\$122,500	\$ 53,400	\$ 509,000	\$15,700
Legislative	6,600	NA	64,400	2,200
Judicial	8,100	3,600	27,400	1,700
Executive	7,900	NA	20,500	NA
Election	1,500	NA	NA	NA
Administration	62,000	NA	239,500	10,500
Planning and Zoning	NA	1,100	12,600	NA
Data Processing	NA	NA	NA	NA
Plant Maint. and Ops.	16,800	8,500	NA	1,300
Other	19,600	40,200	144,600	NA
Public Safety	135,200	56,700	1,031,600	32,000
Police	121,300	49,900	539,800	29,700
Fire	7,500	4,400	491,800	2,300
Other	6,400	2,400	NA	NA
Public Works	247,200	68,300	1,086,700	30,200
Highways and Streets	160,500	45,600	790,100	28,300
Solid Waste Services	86,700	22,700	296,600	1,900
Other	NA	NA	NA	NA
Health	18,800	16,800	57,400	NA
Culture-Recreation	26,900	10,200	501,100	18,700
Participant Recreation	9,100	NA	192,000	NA
Spectator Recreation	NA	NA	NA	NA
Parks	17,100	NA	284,600	NA
Libraries	700	1,500	NA	3,300
Other	NA	8,700	24,500	15,400
Miscellaneous	3,800	NA	1,200	700
Total Current Expenditures	554,400	205,400	3,187,000	97,300
Transfers to Enterprise				
Activities and Governments	NA	14,000	480,700	19,600
Capital Outlay	40,400	24,600	616,600	1,800
Debt Service	18,200	NA	NA	NA
Principal	15,000			
Interest	3,200			

Source: Colorado Division of Local Governments, 1973, pages, 71, 72, 197, 250.

certain economies of scale; for example, population growth and the resultant broadened tax base have enabled per capita service costs to drop.

#### D. Tax Base

If the quality and scope of services provided by local government is to increase commensurately with the demand created by population growth, then the tax base must continue to increase, at a comparable rate. Patterns developed by the data included herein indicate that, to date, such a growth rate has been maintained. An examination of selected factors influencing the tax base suggests several likely future trends.

The three most significant sources of revenue for the three counties, as previously mentioned, are property taxes, state and federal revenue sharing and charges for current services.

##### 1. Property Taxes

Table VI-9 lists property tax valuations by classes of property. Garfield County recorded an increase of some 25 percent in total assessed valuation between 1970 and 1974. Most of the increase was in the value of residential class property, with net declines occurring in four out of seven classes. In Mesa County total valuation increased nearly 20 percent with the greatest rise occurring in the residential class. Rio Blanco County exhibited a rather different trend with overall valuation up some 60 percent due in large part to a near doubling of oil, gas, mining and mineral values. The other two counties, in comparison, registered net declines in this class.

In response to these significant increases in total valuation, the total average county levy has decreased in Mesa and Rio Blanco counties and remained constant in Garfield County (Table VI-10). Average levies for general governmental subdivisions are approximately the same as in 1970 with one notable decrease in the average school levy in Mesa County.

Distribution of revenues among the major county funds is shown in Table VI-11. The proportional allocations have stayed fairly constant since 1970. The County General Fund and the Road and Bridge Fund continue to receive the greatest percentages of total revenues. However Public Welfare in Mesa County receives a rather large share of the revenues in order to meet the necessary expenditures.

Property tax revenue, in general, appears to be increasing at a healthy rate. However, much of this increase is attributable to changing land use patterns in which lands are removed from lower value uses, primarily agricultural, to higher value uses such as industrial and residential. This trend will not continue indefinitely, and when it levels off property tax revenues undoubtedly will level off substantially as well.

Fundamental to a citizen's ability and willingness to pay higher

Table VI-9  
COUNTY PROPERTY TAX VALUATION BY CLASSES OF PROPERTY  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970 and 1974)  
(In Thousands of Dollars)

GARFIELD

	1970	1974
Residential	12,452	19,250
Commercial	7,934	11,498
Industrial	3,495	1,815
Agricultural	8,335	8,138
Oil or Gas	113	1,221 (a)
Mining and Mineral	1,370	
State Assessed	9,218	11,051
Assessed Total	42,827	52,973

MESA

Residential	41,841	53,371
Commercial	26,087	32,789
Industrial	4,550	3,431
Agricultural	17,097	18,366
Oil or Gas	696	630 (a)
Mining and Mineral	789	
State Assessed	17,473	20,759
Assessed Total	108,532	129,478

RIO BLANCO

Residential	2,268	4,452
Commercial	1,451	1,927
Industrial	6	370
Agricultural	4,592	5,501
Oil or Gas	42,572	77,781 (a)
Mining and Mineral	303	
State Assessed	6,730	7,417
Assessed Total	57,923	97,448

Notes: (a) 1974 Assessments Classify "Oil or Gas" and "Mining and Mineral" together under "Natural Resources"

Sources: 1. Colorado Tax Commission, 1971, pages 154 - 157 - 1.  
2. Colorado Division of Property Taxation, 1974, page 84.

Table VI-10  
PROPERTY TAX VALUATION AND TAX LEVIED, INCLUDING AVERAGE  
MILL LEVY FOR THE COUNTY AND THE TOTAL AVERAGE LEVIES IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970 and 1974)

GARFIELD

	1970 <sup>1</sup>	1974 <sup>2</sup>
Valuation	\$ 42,826,580	\$ 52,972,800
Total Revenue	3,233,925	4,217,879
County Mill Levy	14.79	18.50
Average Municipal Levy	9.28	9.87
Average School Levy	53.82	53.29
Average Special Levy	1.29	1.43
Total Average County Levy	75.51	79.62

MESA

Valuation	\$108,523,786	\$129,478,320
Total Revenue	10,307,981	10,273,960
County Mill Levy	17.10	17.45
Average Municipal Levy	14.54	14.48
Average School Levy	64.57	48.02
Average Special Levy	2.41	2.34
Total Average County Levy	94.99	79.35

RIO BLANCO

Valuation	\$ 57,923,353	\$ 97,448,200
Total Revenue	2,804,870	3,990,190
County Mill Levy	10.70	8.80
Average Municipal Levy	32.05	26.06
Average School Levy	32.78	27.55
Average Special Levy	1.12	.83
Total Average County Levy	48.42	40.95

Sources: 1. Colorado Tax Commission, 1971, pages 168-169.  
2. Colorado Division of Property Taxation, 1974, page 120.

Table VI-11  
PROPERTY TAX: COUNTY MILL LEVIES AND FUNCTIONAL DISTRIBUTION  
OF COUNTY REVENUE IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970 and 1974)

GARFIELD

	Mill Levy		(\$ ) Revenue	
	1970 <sup>1</sup>	1974 <sup>2</sup>	1970 <sup>1</sup>	1974 <sup>2</sup>
County General Fund	6.80	9.90	291,221	524,430
County Contingency Fund	1.00	—	42,826	—
Road & Bridge Fund	5.00	4.50	214,133	238,378
Public Welfare	.90	2.50	38,544	132,432
Miscellaneous Funds-Library	1.09	1.40	46,681	74,162
Library Retirement	—	.20	—	10,595
Total	14.79	18.50	633,405	979,997

MESA

County General Fund	6.10	6.70	661,995	867,505
County Contingency Fund	.50	.20	54,262	25,896
Road & Bridge Fund	3.00	3.00	325,571	386,435
Public Welfare Fund	5.00	4.55	542,619	589,126
Miscellaneous Funds-Library	1.50	1.50	162,786	194,218
Library Retirement	1.00	.50	108,524	64,739
Total	17.10	17.45	1,855,757	2,259,397

RIO BLANCO

County General Fund	4.75	4.50	275,136	438,517
County Contingency Fund	—	—	—	—
Road & Bridge Fund	4.30	2.00	249,070	194,896
Public Welfare	.40	.30	23,170	29,235
Miscellaneous Funds-Library (Hosp.)	1.25	—	72,404	—
Library Retirement	—	—	—	—
Total	10.70	8.80	619,780	857,544

Sources: 1. Colorado Tax Commission, 1971, pages 220, 236, 249.  
2. Colorado Division of Property Taxation, 1974, pages 117 - 119.

property taxes and service fees is the continuing growth of his personal income level. Adjusted gross personal income for the three county area has risen approximately 20 percent since 1970 (Table VI-12). Average normal tax liability has increased about 80 percent in the same period.

## 2. Sales Tax

Sales tax is a major source of revenue at the municipal level. The continued growth of these revenues is dependent upon prosperous retail and wholesale sales activity. Tables VI-13, 14 and 15 list retail sales and sales tax collections by county and municipality as well as trade by business class. Both Mesa and Garfield counties have experienced dramatic increases in retail sales since 1970 as a result of their rapidly developing trade and service sectors. While not as impressive as growth in the other counties, Rio Blanco County has recorded an increase in retail sales of some 70 percent since 1970. Considering the anticipated continued development of the trade and service sectors in the region the prospects for increasing sales tax revenues look good.

## 3. Revenue Sharing

State and Federal Revenue Sharing have recently become major sources of revenue for local governments. Allocations from such federal sources as the Taylor Grazing Act and the Mineral Leasing Act provide significant contributions to county revenues. State revenues, particularly for Welfare and Education, also add substantially to overall revenues. Both of these sources will continue to have significant influence upon county revenue patterns.



Table VI-12  
 COLORADO INCOME TAX: INDIVIDUAL ADJUSTED GROSS INCOME  
 AND NORMAL TAX LIABILITY IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
 (Fiscal 1970 and 1974)

GARFIELD COUNTY

	1970	1974
Number of Returns	\$ 6,616	\$ 7,928
Adjusted Gross Income	37,795,349	59,389,838
Normal Tax Liability	645,544.11	1,372,206
Average Adjusted Gross Income	5,712.72	7,491.15
Average Normal Tax Liability	97.57	173.08

MESA COUNTY

Number of Returns	\$ 22,049	\$ 25,534
Adjusted Gross Income	126,632,579	187,745,905
Normal Tax Liability	2,097,787	4,076,821
Average Adjusted Gross Income	5,743.23	7,353
Average Normal Tax Liability	95.14	159.66

RIO BLANCO COUNTY

Number of Returns	\$ 1,958	\$ 2,269
Adjusted Gross Income	10,864,424	16,391,879
Normal Tax Liability	183,613	381,165
Average Adjusted Gross Income	5,548.74	7,224.27
Average Normal Tax Liability	93.78	167.99

Source: Colorado Department of Revenue, 1970, 1974.

Table VI-13  
SALES TAX NUMBER OF RETURNS, RETAIL SALES, AND NET SALES  
TAX COLLECTED IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1964 - 1970 - 1974)  
(In Thousands)

GARFIELD			
	Monthly Average Number of Returns	Retail Sales	Net Sales Tax Collections
1974	5,080	106,262	2,306
1970	4,579	54,584	1,077
1964	4,192	34,449	408
MESA			
1974	12,723	258,306	5,402
1970	11,790	159,948	3,224
1964	11,388	124,588	1,575
RIO BLANCO			
1974	1,498	17,119	338
1970	1,425	10,064	202
1964	1,410	8,942	113

Source: Colorado Department of Revenue, 1964, 1970, 1974.

Table VI-14  
SALES TAX: NUMBER OF RETURNS, RETAIL SALES AND NET TAX COLLECTED  
IN THE CITIES AND TOWNS OF GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Fiscal 1970)

Garfield	Monthly Ave. No. of Returns	Retail Sales	Percentage of County Retail Sales	Net Tax Collections
County	382	\$ 54,584,479	100.00	\$1,077,026
Glenwood Springs	206	35,918,175	65.80	805,338
New Castle	14	332,074	.61	6,899
Rifle	82	13,959,279	25.57	183,006
Carbondale	40	2,453,580	4.50	45,442
Remainder of County	40	1,921,371	3.52	36,361
Mesa				
County	983	\$159,948,351	100.00	\$3,224,285
Collbran	17	653,167	.41	12,836
DeBeque	4	220,986	.14	3,826
Fruita	60	5,714,095	3.57	92,009
Grand Junction	814	145,399,716	90.90	2,949,420
Palisade	41	2,918,266	1.82	60,084
Remainder of County	47	5,042,121	3.15	106,110
Rio Blanco				
County	119	\$ 10,063,697	100.00	\$ 201,932
Meeker	62	4,491,718	44.63	90,349
Rangely	53	5,410,629	53.76	108,010
Remainder of County	4	161,350	1.60	3,573

Source: Wengert, 1973, pages I-58, II-46, III-50.

Table VI-15  
RETAIL TRADE BY BUSINESS CLASS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(Fiscal 1970)

	Garfield	Mesa	Rio Blanco
Apparel	\$ 1,583,000	\$ 4,865,000	\$ 135,000
Automotive	14,110,000	43,634,000	1,762,000
Food	10,972,000	31,693,000	1,932,000
Furniture	1,362,000	7,451,000	1,038,000
General Merchandise	5,038,000	17,745,000	915,000
Lodging	2,165,000	2,689,000	191,000
Lumber & Building	3,781,000	11,397,000	563,000
Professional & Personal Service	4,595,000	1,512,000	80,000
Public Utility	3,914,000	9,516,000	507,000
Unclassified Retail	3,041,000	12,607,000	1,192,000
Farm & Garden Produce	35,000	805,000	0
Mfg., Trading, Jobbing	3,453,000	15,923,000	1,721,000
Miscellaneous	536,000	112,000	26,000
TOTAL	54,584,000	159,948,000	10,064,000

Source: Wengert, 1973, pages I-59, II-47, III-51.

## Glossary of Financial Accounts

### Revenues

Property Taxes include all property taxes levied for the unit of government including general obligation bond levies, except when levied for utility debt service.

Specific Ownership tax on vehicles is also included since the tax is essentially a personal property tax (except those amounts apportioned to utility departments).

Excise and Franchise taxes include retail sales taxes, cigarette taxes and franchise taxes upon privately-owned public utilities. In some cities municipally-owned utilities make payments in lieu of taxes to the city's general fund. In applicable instances, these are also included in this category. (See also Utility Transfers.)

Licenses and Permits include business and non-business licenses, occupation taxes, building permits, curb-cut permits and similar revenues. County licenses and permits also include such items as marriage licenses and chauffers and operators licenses.

Fees, Fines and Forfeits are revenues derived from the operation of the courts and the administration of justice.

Revenues from Other Governments include the obvious revenues such as the governmental unit's share of highway users' fund, special motor vehicle registration fees (\$1.50) and firemen and police pension assistance from the state as well as welfare grants. Federal revenues include such receipts as the unit's share of the Taylor Grazing Act, Mineral Leasing Act and similar federal programs including assistance for special functions; for example, flood damage, hospitals and airports. Special attention in many counties should be given to the inclusion of federal funds for implementing the Economic Opportunities Act. It should be noted that all counties do not have this program.

All Other NEC (Not Elsewhere Classified) includes receipts from governments other than state or federal. However, when federal or state assistance was not clearly set forth in the audit, this category may also include one or both of them.

Charges for Current Services at the county level include those fees and charges made by the county officers in the performance of their duties or for services performed for others. At the municipal level this category includes similar charges for services rendered, but emphasis has been placed on sanitation and sewerage charges when audit reports permitted. Otherwise, all charges are placed in the subcategory NEC.

Interest, Rentals and Sales include revenues from the investment of idle funds, public land or building rentals, and sales of assets including real

and personal property owned by the governmental entity.

Miscellaneous and All Other Receipts is the residual category in which all unidentified revenues were placed along with those revenues not included in any of the major categories above. Special emphasis in this category for municipal governments has been placed on utility receipts transferred from surplus or net revenues to the general fund or other operational funds when applicable. A distinction is made in the compendium between transfers and payments from municipally-owned utilities in lieu of taxes (see Franchise Taxes).

Utility Revenues include all receipts from all sources in support of municipally-owned utilities. (See Property Taxes.)

### Expenditures

General Administration includes expenditures for the specific offices listed and expenditures for general categories such as public works administration, personnel administration, purchasing and data processing. These latter functions are placed in the All Other NEC (Not Elsewhere Classified) subcategory.

Streets and Highways include all expenditures for road and street maintenance. Most units of government also include street lighting. Where possible, street sweeping and snow removal have not been included but have been placed in sanitary services. Since no general definition of capital outlay has been universally adopted, streets and highways may or may not include capital construction. Where an expenditure is designated as capital outlay it has been placed in that category.

Public Safety attempts to classify expenditures for fire, police, building inspection, sheriff and other functions designed to promote public safety; but these should be distinguished from those "safety functions" devoted to public health. These expenditures are included, when possible, in Health and Hospitals.

Justice Expenditures include all court costs, district attorney's and Public Defender's expenditures when applicable.

Planning and Zoning includes expenditures for planning, zoning, administration and boards of adjustments. In those units where building inspection is a part of zoning control, such expenditures are included. Where possible, however, building inspection costs are separated and listed under public safety.

Health and Hospitals for county governments include expenditures for health services and inspections in addition to hospital expenditures when operated by the county or funded by a county-wide mill levy. Expenditures in this category for municipalities include sewage disposal services, sanitation services as well as health and hospital outlays.

Airport includes all outlays for air service and connected functions when the audits clearly indicate them as such.

Public Welfare excludes old age pension payments but includes all other welfare expenditures.

Parks and Recreation includes libraries as well as other community facilities such as a museum.

Public Buildings expenditures are essentially those necessary for the upkeep and maintenance of governmental structures, and associated grounds. All units, however, do not itemize such costs in their audit report.

Employee's Retirement includes social security and retirement benefits paid by the unit of government.

Miscellaneous and Unclassified Expenditures include all outlays for which no other category is applicable or those which remain unidentified in the annual report.

Capital Outlay includes all identifiable expenditures for capital improvements and capital equipment whether from current funds or bond funds.

Utility Expenditures include all outlays for the operations of municipally-owned utilities, debt service and transfers to other funds.

Outstanding Debt is listed as it appears in the audit report. Where no debt is listed, either no debt exists or the audit failed to report it.

---

Source: Division of Local Government, Colorado. 1969  
Local Government Financial Compendium, pp. 317-320.





---

CHAPTER VII

HOUSING

---



## CHAPTER VII      HOUSING

### A.    Introduction and Summary

The current housing situation in the region is addressed in this chapter. This includes the availability, type, cost and quality of housing. Primarily, this chapter deals with county-wide housing statistics prepared during the period 1970 to 1975. Much of the information used here is drawn from the 1970 census, although more recent state and local information is presented where it is available.

During the period 1960 to 1970, the total number of housing units increased in Garfield, Mesa and Rio Blanco Counties. In Garfield and Rio Blanco counties the increase in the number of year-round housing units surpassed the increase in the number of households. The proportion of year-round housing units began to increase before 1970, and was still rising as of 1973. However, the number of housing units categorized as seasonal has decreased in the region in the last ten years. Only in Rio Blanco County did the percent of all housing that was seasonal (10 percent) remain at the same level from 1969 to 1970.

In 1970, Rio Blanco County had the highest percentage of unoccupied year-round housing, while Mesa County had the lowest. Not all unoccupied housing is available for rent or sale in any of the counties. Rio Blanco County had the highest percentage of year-round housing that was unoccupied and unavailable for sale or rent. In all three counties more than twice as many year-round dwellings were unoccupied as were actually available for occupancy.

In 1970, Rio Blanco County had the greatest proportion of housing units that lacked one or more facilities such as plumbing, linkage to a sewer system or central heating. The other two counties also had relatively high percentages of houses lacking certain facilities. This is most likely due, in part, to the fact that about two-fifths of the housing in all three counties was built prior to 1940. Unfortunately, there are no cross-tabulations of housing data documenting the extent to which vacant, rural and older housing is also substandard housing, although it might be assumed that much of it is.

The proportion of mobile homes as a part of all year-round housing is increasing due to limited construction of conventional housing units in the region. The increase in mobile homes is less in Rio Blanco County than in the other two counties. However, it is still greater than the increase in conventional housing for that county.

The proportion of year-round housing which is owner-occupied has remained between two-thirds and three-fourths for the past twelve years in all three counties. Rio Blanco County has had the lowest proportion of owner-occupied homes in the three counties.

Single-family homes are the most common housing units, especially in Garfield and Rio Blanco Counties. However, these two counties showed greater than 100 percent increases during the 1960's in the number of multiple-family dwellings. The proportion of year-round housing in multiple-family units continues to grow in all three counties.

Estimates for Mesa County in 1975 suggest that housing is appreciating at an annual rate of about 20 percent which is considerably higher than increases in median incomes. The growing disparity between housing costs and income is forcing the cost of a single-family house out of reach for many families. Median gross rents in 1970 seem to fall within reasonable ranges when compared to median annual incomes. However, a greater problem may be a shortage of suitable rental units for larger families.

There is very little subsidized housing in the three counties. Most of what has been built is in the city of Grand Junction, in Mesa County. Over two-fifths of this housing is designated for elderly inhabitants.

A desirable housing vacancy rate does not appear to exist, at least not in the larger towns. Field observations since 1973 generally indicate that housing shortages exist in the area, although specific updated figures are only available for Mesa County. Higher than average population growth rates, which are projected for the region, would exacerbate shortages already in evidence.

#### B. Housing Inventory

In Garfield, Mesa and Rio Blanco counties, the number of housing units increased more rapidly than the population from 1960 to 1970. Table VII-1 shows that in the 1960's there was approximately a 21 percent increase in housing inventory in Garfield County, an 11 percent increase in Mesa County and a 4 percent increase in Rio Blanco County. In Table VII-2 is given the estimated increase in the housing inventory for the first 21 months of the 1970's.

It is important to note that the figures in Tables VII-1 and VII-2 utilize all housing as a base. Other reports focus on year-round housing only, excluding housing classified as seasonal or for migratory use only. The Census report states that seasonal housing is too difficult to study fully. Therefore, only a simple count is made. Usage of "all housing" or "all year-round housing" is not consistent in all reports and occasionally leads to discrepancies in results. For Garfield and Mesa County figures this is not a particularly serious problem as the seasonal housing is apparently less than 2 percent of the housing inventory. However, as Table VII-3 indicates, seasonal housing is a more important factor in Rio Blanco County. It makes up about 10 percent of the housing units in both 1960 and 1970.

Table VII-1  
HOUSING INVENTORY AND HOUSING INVENTORY CHANGE  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(1960 - 1970)

County	Housing Inventory April 1, 1960	Housing Inventory April 1, 1970	Net Change 1960 - 1970	Percent Change 1960 - 1970	Annual Percent Change 1960 - 1970	Population, Percent Change 1960 - 1970	Population Annual Percent Change 1960 - 1970
Garfield	4,575	5,537	962	21.0%	2.1%	23.3%	2.3%
Mesa	17,127	18,982	1,855	10.8	1.1	7.2	.7
Rio Blanco	1,944	2,028	84	4.3	.4	-6.0	-.6
Region	23,646	26,547	2,901	12.3	1.2	9.1	.9

Source: Adapted from Task Force '76, 1973, Housing, page 3.

Table VII-2  
ESTIMATED HOUSING INVENTORY AND HOUSING INVENTORY  
CHANGE FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
AND THE REGION  
(1970 - 1972)

County	Estimated Housing Inventory January 1, 1972	Estimated Net Change 1970 - 1972	Estimated Percent Change 1970 - 1972
Garfield	6,170	633	11.4%
Mesa	20,641	1,659	8.7
Rio Blanco	2,033	5	.25
Region	28,844	2,297	9.7

Source: Adapted from Task Force '76, 1973, Housing, page 4.

Table VII-3  
SEASONAL HOUSING UNITS AS PROPORTION OF ALL HOUSING UNITS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(April 1, 1970)

County	All Housing 1970	Year Round Housing 1970	Seasonal Housing 1970	Percent of All Housing that is Seasonal Housing 1970
Garfield	5,537	5,545	92	1.7%
Mesa	18,982	18,798	184	1.0%
Rio Blanco	2,028	1,823	205	10.1%
Three County Region	26,547	26,066	481	1.8%

Source: Adapted from U.S. Census, Census of Housing, 1970.



## 1. Seasonal and Year-Round Housing

Table VII-4 indicates that the percentage of seasonal housing remained constant in Rio Blanco County from 1960 to 1970, although it decreased in the other two counties. There was also a net decrease in seasonal housing for Garfield and Mesa counties during the 1960's and a net increase in year-round housing for all three counties between 1960 and 1970. Garfield County showed the greatest percentage increase in year-round housing with a 20 percent increase over 1960. It is not clear whether the decrease in seasonal housing is due to demolition or to upgrading to year-round housing, although the latter possibility seems more likely.

The estimated change in year-round housing between 1970 and 1973 is given in Table VII-5. This change is greater in all three counties for this three-year period than for all housing during the first 21 months of the 1970's. This may indicate an accelerating rate of increase in development of year-round housing.

## 2. Households and Housing Availability

Since "household" is defined as any person or group of persons occupying a housing unit, an increase in households is more relevant to housing inventory change than is population change in general. Increases in households can result from the formation of new households in the population living in the area or from an influx of new households from outside.

Table VII-6 displays the change in households from 1960 to 1970. Garfield County showed a 26.5 percent increase in households (a 2.7 percent annual increase). In Mesa County, the household increase of 14.7 percent was just slightly higher than the increase in numbers of housing units. Rio Blanco had a net loss of 4.8 percent of its households but a net gain in housing units.

Table VII-7 compares 1970 with estimates for 1973 and shows increases in year-round housing units to be greater in each of the three counties than the estimated increases in households. A recent report for Mesa County shows the estimated average annual percentage growth in households to have been 3.0 percent from 1970 to 1975. However, the same report indicates there was a 5.5 percent estimated average annual growth rate in the housing supply, or a total of 27.5 percent, for the five years from 1970 to 1975.<sup>1</sup>

## 3. Unoccupied Housing

That there are more housing units than households suggests there is unoccupied housing in the three counties. The census definition of

---

1. Mesa County Citizens Advisory Planning Group, 1975, pgs. 4, 9.

Table VII-4  
CHANGES IN SEASONAL AND YEAR ROUND HOUSING  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960 - 1970)

County	Seasonal Housing <sup>(a)</sup>		Seasonal Housing, Net Change 1960-1970	Year Round Housing Net Change 1960-1970	Year Round Housing Percent Change 1960-1970
	1960	1970			
Garfield					
Year Round Housing	4,219	5,445		1,226	29.0%
Seasonal or					
Migratory Units	356	92	-264		
All Housing	4,575	5,537			
Seasonal as Percent					
of all Housing	7.8%	1.9%			
Mesa					
Year Round Housing	16,494	18,798		2,304	14.0%
Seasonal or					
Migratory Units	633	184	-449		
All Housing	17,127	18,982			
Seasonal as Percent					
of all Housing	3.7%	1.0%			
Rio Blanco					
Year Round Housing	1,741	1,823		82	4.7%
Seasonal or					
Migratory Units	203	205	2		
All Housing	1,944	2,028			
Seasonal as Percent					
of all Housing	10.4%	10.1%			

Notes: (a) Different figures for seasonal housing appear in different sections of the 1970 Census reports. The figures used in this table are the same as those used in the Colorado Division of Housing report entitled Current Inventory and Needs, April 1, 1973. Differences between the two sets of figures are slight in the case of Garfield and Mesa Counties, but more substantial for Rio Blanco, with the net difference in seasonal housing being 140 compared to 82, and the percent change in year round housing being 8% compared to 4.7%.

Source: U.S. Census, Census of Housing, 1960, 1970.

Table VII-5  
ESTIMATED CHANGE IN YEAR-ROUND HOUSING  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES, THE REGION AND THE STATE OF COLORADO  
(1970 - 1973)

County	Total <sup>1</sup> Year-Round Housing 1970	Estimated Year-Round Housing 1973	Estimated Net Change in Year-Round Housing 1970 - 1973	Estimated Per- cent Change in Year-Round Housing 1970 - 1973	Estimated Average Annual Percent Change in Year- Round Housing 1970 - 1973	Estimated <sup>2</sup> Percent Change Housing Inventory, April 1, 1970 to January 1, 1972
Garfield	5,445	6,315	870	16%	5.3%	11.4%
Mesa	18,798	21,226	2,428	12.9%	4.3%	8.7%
Rio Blanco	1,823	1,879	56	3.1%	1.0%	.25%
Region	26,066	29,420	3,354	12.9%	4.3%	9.7%
Colorado	741,650	897,521	155,871	21.0%	7.0%	—

Sources: <sup>1</sup>Colorado Division of Housing, 1973, pages 22 and 70-74.

<sup>2</sup>Data from 70-72 adapted from Task Force '76, 1973, Housing, page 4.

Table VII-6  
CHANGE IN NUMBERS OF HOUSEHOLDS IN  
GARFIELD, MESA, AND RIO BLANCO COUNTIES AND THE REGION  
(1960-1970)

County	Number of <sup>1</sup> Households (Occupied Houses) 1960	Number of <sup>2</sup> Households (Occupied Houses) 1970	Households, <sup>2</sup> Net Change 1960-1970	Households, <sup>2</sup> Percent Change 1960-1970	Households, <sup>2</sup> Average Annual Percent Change 1960-1970	Year-Round <sup>1</sup> Housing, Percent Change 1960-1970	Year-Round <sup>2</sup> Housing, Average Annual Percent Change 1960-1970
Garfield	3,892	4,923	1,031	26.5%	2.7%	29.0%	2.9%
Mesa	15,376	17,640	2,264	14.7%	1.5%	14.0%	1.4%
Rio Blanco	<u>1,549</u>	<u>1,474</u>	<u>-75</u>	-4.8%	-.5%	4.7%	.5%
Region	20,817	24,037	3,220	15.5%	1.6%	16.1%	1.6%

Sources: 1. Adapted from U. S. Census, Census of Housing, 1960.

2. Adapted from Colorado Division of Housing, 1973, Page 79.

Table VII-7  
ESTIMATED CHANGE IN NUMBER OF HOUSEHOLDS AND YEAR-ROUND HOUSING IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(1970-1973)

County	Number of Households 1970	Estimated Number of Households 1973	Households, Estimated Net Change 1970-1973	Households, Estimated Percent Change 1970-1973	Estimated Average Annual Percent Change 1970-1973	Year-Round <sup>1</sup> Housing, Estimated Percent Change 1970-1973	Year-Round <sup>1</sup> Housing, Estimated Average Percent Change 1970-1973
Garfield	4,923	5,450	527	10.7%	3.6%	21.0%	7.0%
Mesa	17,640	18,700	1,060	6.8%	2.3%	16.0%	5.3%
Rio Blanco	1,474	1,490	16	1.1%	.4%	3.1%	1.0%
Region	24,037	25,640	1,603	6.7%	2.2%	12.9%	4.3%

Source: 1. Adapted from Colorado Division of Housing, 1973, pages 22, 70-74, 79.

household indicates that the number of households is equivalent to the number of occupied housing units. Therefore, the difference between the total number of units and the number of households indicates the number of unoccupied housing units. Also, the increase in households indicated in the census figures is assumed to be permanent population.

In 1970, the percentage of unoccupied year-round housing was 19 percent in Rio Blanco County, approximately 10 percent in Garfield County and 6 percent in Mesa County (Table VII-8). Table VII-9 shows the estimate of unoccupied housing in 1973. Rio Blanco County still had the highest percentage of unoccupied units although the percentage declined between 1970 and 1973. Estimated percentages of unoccupied housing were larger in 1973 than in 1970 for Garfield and Mesa counties. Information on the proportion of these unoccupied houses which are substandard or in dilapidated condition might explain their unoccupied status; however, such information is not immediately available.

It is important to note the distinction made in the Census between unoccupied housing and housing that is vacant, that is, available for sale or rent. Vacant (and available) units represent a lower number than the number of unoccupied houses in most cases. Year-round housing units may stand unoccupied because they are used as second homes, have been recently sold or rented but are not yet occupied, or are tied up in legal procedures such as estate settlements. The Census does not enumerate dwellings considered unfit for human habitation, those posted for condemnation or those to be demolished.

#### a. Vacancy Rates

Residential vacancies, or houses for sale or rent, increased between 1960 and 1970 in Rio Blanco and Garfield counties and decreased in Mesa County (Table VII-10). The decline in Mesa County vacancies suggests that the county has had a housing shortage and that its margin of increased housing units relative to increased households is less than the margins in the other two counties.

Another perspective on the availability of housing considers the "effective" vacancy rate. An "effective" vacancy rate eliminates vacant units which are substandard and vacant units held off the market.

According to the Colorado Division of Housing, an "effective" vacancy rate of 5.0 percent to 6.0 percent for rental units is considered normal under conditions of average population growth. An average rate of population growth is 1.5 to 3.0 percent per year. Five to six percent is the proportion of "effective" vacant units considered desirable for supplying choice and mobility for new households or for families who are able to upgrade their living situation. A Colorado Division of Housing report explains the relationship between rapid rates of in-migration and vacant housing needs in the following excerpt.

Table VII-8  
UNOCCUPIED YEAR-ROUND HOUSING IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(April 1, 1970)

County	Number of Households, (Occupied Houses) April 1, 1970	Year-Round Housing Inventory April 1, 1970	Year-Round Housing, Less Households (Unoccupied Houses)	Unoccupied Houses as Percent of All Year-Round Housing, 1970	Ratio of Year-Round Housing to Households 1970
Garfield	4,923	5,445	522	9.6%	1.1
Mesa	17,640	18,798	1,158	6.2%	1.1
Rio Blanco	1,474	1,823	349	19.1%	1.24
Region	24,037	26,066	2,029	7.8%	1.1

Source: Adapted from Colorado Division of Housing, 1973, page 79.

Table VII.9  
ESTIMATED NUMBER OF HOUSEHOLDS AND ESTIMATED HOUSING INVENTORY IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(April 1, 1973)

County	Estimated Number of Households, 1973	Estimated Year-Round Housing, 1973	Estimated Unoccupied Year-Round Housing, 1973	Percent Unoccupied Year-Round Housing 1973	Ratio of Year-Round Houses to Households 1973
Garfield	5,450	6,315	865	13.7%	1.16
Mesa	18,700	21,226	2,526	11.9%	1.14
Rio Blanco	<u>1,490</u>	<u>1,879</u>	<u>389</u>	20.7%	1.26
Region	25,640	29,420	3,780	12.8%	1.15

Source: Adapted from Colorado Division of Housing, 1973, pages 74, 79.



Table VII-10  
COMPARISON OF UNOCCUPIED HOUSING AND AVAILABLE VACANT HOUSING  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(April 1, 1960 and April 1, 1970)

County	Year-Round Housing Units		Unoccupied Year-Round Housing Units		Unoccupied Units as Percent of all Year- Round Housing		Available (a) Vacant Year- Round Housing Units		Available Year-Round Housing as Percent of Unoccupied Year- Round Housing		Available Vacant Units as Percent of all Year-Round Units	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
Garfield	4,219	5,445	327	522	7.8%	9.9%	92	158	28.1%	30.3%	2.2%	2.9%
Mesa	16,494	18,798	1,118	1,158	6.8%	6.2%	665	526	59.5%	45.4%	4.0%	2.8%
Rio Blanco	1,741	1,823	192	349	11.0%	19.1%	118	145	61.5%	41.5%	6.8%	8.0%
Region	22,454	26,066	1,637	2,029	7.3%	7.8%	875	829	53.5%	40.9%	3.9%	3.2%

Note: (a) The Task Force '76, 1973, document estimates that in 1972 there were 171 available vacant units in Garfield County, 525 in Mesa County, and 145 in Rio Blanco County. There is no comparable figure for year-round housing units in 1972 from which a percent of available vacant year-round housing units can be figured; it can be noted that, though there was no increase in available units between 1970 and 1972 for Rio Blanco County, the increase was 8.2% for Garfield and 6.8% for Mesa.

Source: U.S. Census, Census of Housing, 1960, 1970.

Areas experiencing rapid growth and substantial in-migration require proportionately more available vacancies than areas where growth is comparatively slow and in-migration is not a significant factor.<sup>1</sup>

The report suggests that areas experiencing an above-average growth rate may need effective vacancy rates of 2.0 percent for owners and 6.0 percent to 8.0 percent for renters. Furthermore, the higher the overall percentage of renter units, the better the chance that the renter vacancy rate will approach desirable levels. Growth in Garfield and Mesa counties has been above average in recent years and the growth rate in Rio Blanco County is also increasing. Overall vacancy percentages were only on the order of 3 percent for Garfield and Mesa counties in 1970 (Table VII-10).

The Mesa County Citizen's Advisory Planning Group reported in a survey that 36 rental units were available in Mesa County. These 36 rental units found to be available represented a vacancy rate of less than one percent of the estimated 3,866 total rental units in Grand Junction and vicinity as of April 1, 1974. Also, only 10 of the 36 rental units counted had more than one room. The Planning Group reports that there are continual waiting lists for the larger apartment complexes in Grand Junction, which, among other considerations, indicates that suitable rental units are in very short supply.<sup>2</sup>

The same group noted that in May, 1975, 282 housing units were listed for sale in Mesa County Multiple Listings. A few additional units were not listed but were available. These figures suggest an approximate vacancy rate for owner units of 1.2 percent for Mesa County in the spring of 1975. Field observations in recent reports on housing suggest a shortage of actual vacancies, especially rentals, in the region.<sup>3</sup>

#### 4. Housing Types and Occupancy Patterns

This section discusses single-family and multiple-family housing. Also reviewed is the kind and extent of housing occupancy, such as whether the property is owner-occupied or renter-occupied.

##### a. Mobile Homes

As noted earlier, the estimated number of year-round housing units increased in all three counties during the periods 1960-1970 and 1970-

- 
1. Colorado Division of Housing, 1973, pg. 28.
  2. Mesa County Citizen's Advisory Planning Group, 1975, pgs. 21-22.
  3. Bowers, 1974, pg. 8, Colorado Division of Housing, 1973, pg. 29 and Mesa County Citizen's Advisory Planning Group, 1975, pg. 21.

1973. Tables VII-11, 12 and 13, deal with types of housing in the three counties. These tables illustrate the significant role that mobile homes have played in increasing year-round single-family dwellings since 1960. In the three counties in 1960, mobile homes represented 4 percent to 5 percent of all year-round housing (Table VII-11). However, the percentage increase in mobile homes since then has been greater than that for conventional housing.

The number of mobile homes and trailers in Garfield County increased by more than 250 percent between 1960 and 1970, while conventional housing increased by 18 percent (Table VII-12). The increase was less in Mesa and Rio Blanco counties, although it was still large (94 percent and 84 percent respectively). Conventional housing increased 18 percent in Garfield County and 10 percent in Mesa County but only 1 percent in Rio Blanco County between 1960 and 1970 (Table VII-12). The proportion of mobile homes to year-round housing was slightly lower in Mesa and Rio Blanco counties, but has recently risen. The estimated annual increase in conventional housing was greater between 1970 and 1973 for Garfield and Mesa counties at 7 percent and for Rio Blanco County at 1 percent in a period of only three years (Table VII-13).

#### b. Owner vs Renter Occupancy

The percentage of year-round housing that is owner-occupied or for sale has changed very little since 1960 in Garfield and Mesa counties with rates ranging between 57 and 64.3 percent in Garfield County and 71.2 and 72.6 percent in Mesa County. However, Rio Blanco County has rates of "owner-occupancy or for sale" ranging from 54.3 to an estimated 63 percent (Tables VII-14 and VII-15).

Two tables showing housing ownership in 1970 are presented since the figures were calculated in different ways. Table VII-14 presents figures for available housing as a percent of total year-round housing calculated from figures given in the 1960 and 1970 Census reports. Table VII-15 provides figures on type of occupancy for 1970 based on all housing, an estimation for 1972 based on all housing and a comparison with a 1973 estimate based on year-round housing only. Although the percentages differ slightly, the types of occupancy relationships described in the previous paragraph do not differ substantially.

Although 1970 census information was not available on mobile home tenure in all counties in Colorado, based on the figures that were available, the State Housing Board estimated that 85 percent of all mobile homes in the state were owner-occupied and 15 percent were renter-occupied.<sup>1</sup>

Table VII-16 shows the estimated number of mobile homes in each of the counties as well as another set of owner-occupancy rates for

---

1. Colorado Division of Housing, 1973, pg. 74.

Table VII-11  
MOBILE HOMES AND CONVENTIONAL HOUSING STRUCTURES IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(April 1, 1960)

County	Year-Round Conventional Housing Units	Mobile Homes And Trailers	Total Year-Round Housing Units	Percent Mobile Homes are of All Year-Round Housing
Garfield	4,017	202	4,219	4.8%
Mesa	15,798	696	16,494	4.2%
Rio Blanco	<u>1,662</u>	<u>79</u>	<u>1,741</u>	4.5%
Region	21,477	977	22,454	4.4%

Source: U.S. Census, Census of Housing, 1960.

Table VII-12

SELECTED INFORMATION ON MOBILE HOMES AND CONVENTIONAL HOUSING  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(1970, 1960 - 1970)

County	1970 <sup>1</sup>			1960 - 1970 <sup>2</sup>			
	Year-Round Conventional Housing	Mobile Homes and Trailers	Total Year- Round Housing Units	Mobile Homes as Percent of All Year- Round Housing	Change in Conventional Housing Units Net %	Change in Mobile Homes Net %	Change in All Year-Round Housing Net %
Garfield	4,733	712	5,445	13%	716 17.8%	510 252.5%	1,226 29.0%
Mesa	17,445	1,353	18,798	7.2%	1,647 10.4%	657 94.4%	2,304 14.0%
Rio Blanco	1,678	145	1,823	7.6%	16 1.0%	66 83.5%	82 4.7%
Region	23,856	2,210	26,066	8.5%	2,379 11.1%	1,233 126.2%	3,612 16.1%

Sources: 1. Data adapted from Colorado, Division of Housing, 1973, page 74.

2. Figures for 1960 Conventional Housing and Mobile Homes from U.S. Census, Census of Housing, 1960.

Table VII-13  
ESTIMATED NUMBER AND CHANGES IN NUMBERS OF MOBILE HOMES AND CONVENTIONAL  
HOUSING STRUCTURES IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(1970 - 1973, 1973)

County	Estimated Year-Round Conventional Housing Units	Estimated Mobile Homes and Trailers	Estimated Total Year-Round Housing Units	Estimated Percent Mobile Homes are of Year-Round Housing	1970 - 1973		
					Estimated Change in Conventional Units Net %	Estimated Change in Mobile Units Net %	Estimated Change in Year-Round Housing Net %
Garfield	5,064	1,251	6,315	19.8%	331 7%	539 76%	870 16.0%
Mesa	18,726	2,500	21,226	11.8	1,281 7	1,147 85	2,428 12.9
Rio Blanco	1,701	178	1,879	9.5	23 1	33 23	56 3.1
Region	25,491	3,929	29,420	13.4	1,635 6.9	1,719 77.8	3,359 12.9

Source: Colorado Division of Housing, 1973, page 74.

Table VII-14  
TENURE OF YEAR-ROUND HOUSING IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960, 1970)

County	Total Year-Round Housing	Available Year-Round Housing	Available, Owner- Occupancy or For Sale Number (%)	Available, Renter- Occupancy or For Rent Number (%)	Total Year-Round Housing, Not Available Number (%)
- - - - 1960 - - - -					
Garfield	4,219	3,984	2,592 (65%)	1,392 (35%)	235 (5.6%)
Mesa	16,494	16,041	11,638 (72.6%)	4,403 (27.4%)	453 (2.7%)
Rio Blanco	1,741	1,667	906 (54.3%)	761 (43.7%)	74 (4.3%)
- - - - 1970 - - - -					
Garfield	5,445	5,104	3,282 (64.3%)	1,822 (35.7%)	341 (6.3%)
Mesa	18,798	18,213	12,969 (71.2%)	5,244 (28.8%)	585 (3.1%)
Rio Blanco	1,823	1,619	925 (57.1%)	694 (42.9%)	204 (11.2%)

Source: U. S. Census, Census of Housing, 1960, 1970.

Table VII-15  
HOUSING TENURE IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970, 1972, 1973 est.)

County	Housing Inventory, April 1, 1970 <sup>1</sup>			Estimated Housing Inventory, January 1, 1972 <sup>1</sup>			Estimated Year-Round Housing <sup>(a)</sup> Inventory, April 1, 1973 <sup>2</sup>		
	Total No.	Owned No. (%)	Rented No. (%)	Total No.	Owned No. (%)	Rented No. (%)	Total No.	Owned No. (%)	Rented No. (%)
Garfield	5,537	3,650 (66%)	1,887 (34%)	6,170	4,136 (67%)	2,034 (33%)	6,315	4,257 (67%)	2,058 (33%)
Mesa	18,982	13,582 (72%)	5,400 (28%)	20,641	14,849 (72%)	5,792 (28%)	21,226	15,343 (72%)	5,883 (28%)
Rio Blanco	2,028	1,140 (56%)	888 (44%)	2,033	1,146 (56%)	881 (44%)	1,879	1,193 (63%)	686 (37%)

Note: (a) Estimates for 1973 based on year-round housing only, while 1970 figures and 1972 estimates are based on all housing.

- Sources: 1. Adapted from Task Force '76, 1973, Housing, pages 3-4.  
2. Adapted from Colorado Division of Housing, 1973, page 74.



Table VII-16  
TENURE OF CONVENTIONAL HOUSING UNITS  
IN GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(1970)

County	Total Year-Round Housing	Mobile Homes	Conventional Housing Units	Owner-Occupied Conventional Year-Round Housing Number	Owner-Occupied Conventional Year-Round Housing Percent	Renter Occupied Conventional Year-Round Housing Number	Renter Occupied Conventional Year-Round Housing Percent
Garfield	5,445	712	4,733	3,045	64.3%	3,045	36.7%
Mesa	18,798	1,353	17,445	12,432	71.3%	5,013	28.7%
Rio Blanco	<u>1,823</u>	<u>145</u>	<u>1,678</u>	<u>1,017</u>	60.6%	<u>661</u>	40.4%
Region	26,066	2,210	23,856	16,494	69.1%	7,362	30.9%

Source: Adapted from Colorado Division of Housing, 1973, page 74.

conventional housing of 64.3 percent in Garfield County, 71.3 percent in Mesa County and 60.6 percent in Rio Blanco County. These rates differ somewhat from the 1970 rates for owner-occupancy of all year-round housing shown in Table VII-15. The rates of ownership differ because the mobile home proportion is estimated.

#### c. Single and Multiple-Unit Housing

Besides the marked increase in the use of mobile homes as year-round housing in the region, there has been an increase in housing structures containing one or more units. Table VII-17 gives information on single-family and multiple-family units and indicates changes in the percentages of housing units that are multiple-family structures. The percentages of units in multiple-family structures doubled between 1960 and 1970 in both Garfield and Rio Blanco counties, and increased only slightly in Mesa County. The lower rate of increase in Mesa County is probably due to the location of the city of Grand Junction in Mesa County. Urbanized areas are likely to have more multiple-family structures because of higher city property values, higher proportions of persons willing to live in multiple dwellings in order to be centrally located and the need for short-term housing on the part of in-migrants. Grand Junction built more multiple-unit structures sooner than the smaller towns and has a larger base against which increases are calculated.

Table VII-18 presents comparisons of single and multiple-unit structures in 1960 and 1970. It shows that the ratio of single-unit housing structures to all year-round housing structures has decreased in all three counties. On the other hand, Garfield and Rio Blanco counties showed more than a 100 percent increase in multiple-unit housing between 1960 and 1970 and Mesa County showed a 28 percent increase. Garfield County's absolute increase of 533 multiple-family dwelling units was the largest of the three counties.

Table VII-19 focuses in more detail on the 1970 distribution of single-family and multiple-family structures of conventional construction type. Multiple-family dwellings represent 18 percent, 14 percent and 14 percent of the conventional housing structures for Garfield, Mesa and Rio Blanco counties respectively, in 1970.

#### 5. Condition of Housing

Table VII-20 gives information on plumbing facilities in year-round housing for 1970. In Garfield and Mesa Counties, less than 7 percent of the households lacked plumbing facilities, while in Rio Blanco County 11.6 percent of the housing units were partially or completely without plumbing facilities and 8 percent did not have piped water.

The percentage of housing units on water and sewer systems and equipped with central heating varies greatly within and among the

Table VII-17  
ONE-UNIT AND MULTIPLE-UNIT HOUSING STRUCTURES IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960, 1970)

County	Total Year-Round Housing Units	Total One-Unit Housing Structures	Conventional Construction One-Unit Housing Structures	Occupied Mobile Homes	Total Housing Units in Multiple Unit Housing Structures	Percent of Housing Units in Multiple Unit Housing Structures
			<u>1960<sup>1</sup></u>			
Garfield	4,219	3,859	3,668	191	360	8.5%
Mesa	16,494	14,644	13,948	696	1,850	11.2%
Rio Blanco	1,741	1,630	1,551	79	111	6.4%
			<u>1970<sup>2</sup></u>			
Garfield	5,445	4,606	3,894	712	893	16.4%
Mesa	18,708	16,434	15,081	1,353	2,364	12.6%
Rio Blanco	1,823	1,595	1,450	145	228	12.5%

Sources: 1. Housing data for 1960 from U. S. Census, Census of Housing, 1960.

2. Housing data for 1970 from Colorado Division of Housing, 1973, page 74 and Task Force '76, 1973, Housing, pages 3-4.

Table VII-18  
CHANGES IN ONE-UNIT HOUSING STRUCTURES, MULTIPLE-UNIT HOUSING STRUCTURES,  
CONVENTIONAL HOUSING, AND MOBILE HOMES IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960, 1970)

County	Percent One-Unit Housing Structures are of Year-Round Housing 1960	1970	Percent Mobile Homes are of One-Unit Housing Structures 1960	1970	Ratio of Conventional Construction One-Unit Housing to Mobile Homes 1960	1970	Percent Change in Number of Housing Units in Multiple-Unit Housing Structures 1960 to 1970 Net	Percent
Garfield	91.5%	71.5%	4.9%	15.5%	19.2	5.47	533	148.1%
Mesa	88.8%	80.2%	4.8%	8.2%	20.0	11.15	514	27.8%
Rio Blanco	93.6%	79.5%	4.8%	9.1%	19.6	10.0	117	105.4%

Source: U.S. Census, Census of Housing, 1960, 1970.

Table VII-19  
SINGLE-UNIT HOUSING AND MULTIPLE-UNIT HOUSING AS PROPORTIONS  
OF ALL CONVENTIONAL HOUSING STRUCTURES IN GARFIELD, MESA, RIO BLANCO COUNTIES  
AND THE REGION  
(1970)

Counties	Total Number April 1, 1970	One-Unit Structures Total	One-Unit Structures as Percent of Total	Two- or more Unit Structures Total	Two- or more Unit Structures as Percent of Total
Garfield	4,733	3,894	82.2%	839	17.7%
Mesa	17,445	15,081	86.4%	2,364	13.6%
Rio Blanco	1,679	1,450	86.4%	228	13.6%
Region	23,856	20,425	85.6%	3,431	14.4%

Source: Data adapted from Colorado Division of Housing, 1973 and from Task Force '76, 1973, Housing, page 15.

Table VII-20  
PLUMBING FACILITIES IN YEAR-ROUND HOUSING IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1970)

County	Total Number Year-Round Units	Number Lacking Some or All Plumbing Facilities	Percent Lacking Some or All Plumbing Facilities	Number Lacking Piped Water	Percent Lacking Piped Water
Garfield	5,445	287	5.3%	71	1.3%
Mesa	18,798	1,216	6.5%	320	1.7%
Rio Blanco	1,823	218	11.6%	143	7.8%

Source: Task Force '76, 1973, Housing, page 10.

three counties (Table VII-21). No pattern seems evident that indicates greater or less housing quality. Approximately 25 to 40 percent of the housing units lack one or all of the three conveniences of a water system, sewer system or central heating. Mesa County is the exception to this pattern. Approximately 91 percent of housing units in that county are connected to a water system.

The housing units without hook-ups to water and sewer systems or without central heating may be mostly units constructed before 1940 (Table VII-22). However, no cross-tabulated figures are available that indicate the age or location (rural vs urban) of houses with and without the conveniences.

Regarding age alone, Garfield County had the highest percentage (17 percent) of housing built between 1965 and 1970, as well as the highest (41 percent) built before 1940. Rio Blanco County had the lowest percentage (6 percent) of recent housing. However, 39 percent of Rio Blanco County's housing and 38 percent of Mesa County's housing was built before 1940.

The U.S. Bureau of the Census uses a figure of one person per room to be the maximum desirable density in a house. Using this as a basis for computing the extent of overcrowding, 7 percent - 8 percent of housing units in the three counties were overcrowded in 1970 (Table VII-23).

## C. Housing Costs

### 1. Ownership Costs

Table VII-24 gives the distribution of owner units by value for 1970. Garfield County homes had the highest median value, \$14,800, and Rio Blanco County homes the lowest at \$11,600. The higher median value of housing units in Garfield County is probably associated with tourist development in adjoining Pitkin County and the desirability of living near Pitkin County resort areas.

According to 1973 estimates, median family incomes in the three counties were around \$10,000 (Table VII-25). The median household income was around \$9,000 (Table VII-26). As a general rule it is assumed that families cannot afford a housing unit that is more than twice their gross income. Table VII-27 shows figures taken from building permit records for 1974 on the average value of new housing starts and the estimated amounts spent on individual remodeling projects. Using either the family or household incomes as a base, the opportunity to buy even moderately priced houses in the region has been small.

Another general guideline about the feasibility of purchasing a home is that the family should not spend more than 25 percent of their gross monthly income for house payments or rent and utilities. Using estimates based on calculations incorporating this rule of thumb, it

Table VII-21  
WATER, SEWAGE DISPOSAL AND HEATING FACILITIES IN  
YEAR-ROUND HOUSING IN GARFIELD, MESA AND  
RIO BLANCO COUNTIES  
(1970)

County	Units on Water System		Units on Sewer System		Units with Central Heating	
	Number	Percentage	Number	Percentage	Number	Percentage
Garfield	3,983	73.3%	3,504	64.5%	4,121	75.9%
Mesa	17,075	90.7%	10,057	53.4%	12,485	66.4%
Rio Blanco	1,351	71.8%	1,231	65.4%	1,128	60.0%

Source: Bowers and Associates, 1974, page 51.

Table VII-22  
HOUSING BUILT DURING SPECIFIED TIME PERIODS IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(pre 1939, 1965 - 1970)

County	Number Built 1965 to March 1970	Percent Recent Housing is of Total Housing	Number Built 1939 or Earlier	Percent Older Housing is of Total Housing	Total Number of Year-Round Units
Garfield	908	16.7%	2,185	40.1%	5,445
Mesa	1,929	10.3%	7,228	38.5%	18,798
Rio Blanco	<u>114</u>	6.3%	<u>684</u>	37.5%	<u>1,823</u>
Region	2,951	11.3%	10,097	38.7%	26,066

Source: Adapted from Task Force '76, 1973, Housing, page 10.



Table VII-23  
OVERCROWDING OF HOUSING IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(1970)

County	Total Year-Round Housing Units	Number with 1.01 or more persons per room	Percent with 1.01 person or more per room
Garfield	5,445	416	7.6%
Mesa	18,798	1,213	6.5%
Rio Blanco	<u>1,823</u>	<u>160</u>	8.8%
Region	26,066	1,789	6.9%
Colorado	—	—	6.9%
Colorado Counties outside SMSA's	—	—	9.2%

Source: U.S. Census, Census of Housing, 1970.

Table VII-24  
VALUE OF OWNER-OCCUPIED UNITS  
IN GARFIELD, MESA, RIO BLANCO COUNTIES AND THE REGION  
(1970)

County	Total No. of Owner- Occupied Units	Distribution of Owner Units By Value						Med. Val.
		Less Than \$5,000	5,000 to 9,999	10,000 to 14,999	15,000 to 19,999	20,000 to 24,999	25,000 to 34,999	35,000 or More
Mesa	9,483	499	2,304	2,839	1,842	995	694	310
Garfield	1,953	163	357	476	334	272	254	97
Rio Blanco	<u>534</u>	<u>58</u>	<u>129</u>	<u>158</u>	<u>96</u>	<u>35</u>	<u>48</u>	<u>10</u>
Region Totals	11,970	720	2,790	3,473	2,272	1,302	996	417
	100%	6%	23%	29%	19%	11%	8%	4%
								\$13,233
								<u>\$11,600</u>
								\$14,800

Source: Adapted from Task Force '76, 1973, Housing, page 12.

Table VII-25  
ESTIMATED FAMILY INCOMES, BY PERCENTILE GROUPS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1973)

	Family Percentile Group(a)	Counties	
		Garfield	Mesa Rio Blanco
Median Income	10--	\$ 4,470	\$ 3,710
	20--	5,890	5,550
	30--	7,320	6,500
	40--	8,850	8,100
	50--	10,210	9,760
	60--	12,510	11,250
	70--	14,480	12,960
	80--	17,720	15,230
	90--	24,720	20,830

Notes: (a) A family consists of a household head and one or more persons living in the same household who are related to the head by blood, marriage, or adoption. Not all households contain families because a household may be composed of a group of unrelated persons or one person living alone.

Income and family figures reflect upper limits of percentile groups; for example, it is estimated that 50 percent of all families in Garfield County received annual gross incomes at or below \$10,210 during the period from April 1, 1972 to April 1, 1973.

Source: Colorado Division of Housing, 1973, page 103.

Table VII-26

Median Income

Income and household figures reflect upper limits of percentile groups, for example, it is estimated that 50 percent of all households in Garfield County received annual gross incomes at or below \$7,190 during the period from April 1, 1972 to April 1, 1973.

Colorado Division of Housing, 1973, page 95.

Table VII-27

VALUE OF SINGLE RESIDENCES, MULTIPLE HOUSING STRUCTURES, AND OF  
RESIDENTIAL REMODELING AS INDICATED BY BUILDING PERMITS IN  
GARFIELD, MESA, RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1974)

SINGLE RESIDENCES<sup>1</sup>

County	Total Value	Number of Permits	Average Value Per Permit
Garfield	\$ 2,501,696	98	\$25,528
Mesa	\$ 12,892,288	628	\$20,529
Rio Blanco	\$ 991,498	47	\$21,096
Colorado	\$319,530,030	13,743	\$23,323

MULTIPLE UNIT HOUSING STRUCTURES<sup>1</sup>

County	Total Value	Number of Permits	Average Value per Structure	Number of Units	No.	Type of Units	%
Garfield	\$ 71,000	2	\$ 35,500	8	4	Duplexes (= 8 units)	100
Mesa	\$ 3,068,400	42	\$ 73,057	220	22	Duplexes (=44 units)	52
					14	Condominiums (=99 units)	33
					6	Apartments (=77 units)	11
Rio Blanco	\$ 143,000	2	\$ 71,500	18	2	Apartments (=11 units)	10
Colorado	\$113,442,834	1053	\$103,130	7901	307	Duplexes	29
					149	Condominiums	14
					597	Apartments	57

RESIDENTIAL REMODELING<sup>2</sup>

County	Total Value	Number of Permits	Average Value per Permit
Garfield	\$ 386,573	116	\$ 3,333
Mesa	\$ 2,645,671	613	\$ 4,398
Rio Blanco	\$ 305,606	90	\$ 3,396
Colorado	\$ 42,055,754	18,573	\$ 2,264

Sources: 1. Adapted from Colorado Division of Planning, 1975 (a), pages 1, 4, 7, 10, 13, 16.

2. Adapted from Colorado Division of Planning, 1975 (a), pages 3, 6, 9, 12, 15, 18.

appears that only about 14 percent of all houses for sale in Mesa County in 1975 could be purchased by a family with the estimated median income in Mesa County in 1975 of \$10,120. Using the estimated median price of housing units for sale in Mesa County of \$36,000 in 1975, approximately 75 percent of all Mesa County families could not afford to purchase a house of this value. Furthermore, it was estimated that in Mesa County, and, perhaps in the other two counties, an average home appreciates at a rate of 18 percent to 24 percent per year.

At a 20 percent annual rate of appreciation, a house valued at \$20,000 one year, could be valued at \$24,000 the next. If there were not equivalent increase in family income, such an increase in selling price could cause an additional 10 percent of 1,615 Mesa County families to be unable to afford such a house in the course of one year.<sup>1</sup>

Numbers of mobile homes may be increasing in part due to the cost of a single-family home, since mobile homes are somewhat cheaper than conventional housing. The average price of a single wide mobile home, in 1975 was \$13,000 and a double wide home was \$18,000. However, it has been pointed out that bank loans for mobile homes are usually for shorter periods than for conventional housing and the monthly payments on a mobile home combined with pad rental fees may actually be higher than payments on conventional housing.<sup>2</sup>

## 2. Rental Rates

Median gross rents for the region in 1970 ranged from \$89 in Mesa County to \$98 in Garfield County (Table VII-28). Observations indicate that increases in rents have kept pace with other prices since 1970.

## 3. Subsidized Housing

Some subsidized housing exists in each of the three counties. Rio Blanco County had five such units for moderate income households as of 1973 (Table VII-29). Mesa County had 425 subsidized units, mostly for moderate income families and Garfield County had 90 units. Two-thirds of the units in Garfield County were used by moderate income families. It is probable that urban Grand Junction accounts for the greatest number of units in Mesa County. Forty-four percent of the subsidized housing units in Mesa County in 1973 were designated for elderly inhabitants. This percentage is almost twice the percentage of subsidized housing utilized by the elderly in the state.

The low number of subsidized units in the region suggests that subsidized housing is not a particularly acceptable adjustment to low

---

1. Mesa County Citizen's Advisory Planning Group, 1975, pgs. 20-21.

2. Mesa County Citizen's Advisory Planning Group, 1975, pg. 23.

Table VII-28

GROSS RENTS OR RENTER-OCCUPIED UNITS IN  
MESA, GARFIELD, RIO BLANCO COUNTIES AND THE REGION  
(1970)

Counties	Total No. of Non owner- Occupied Units	Less Than \$40.	\$40. to \$51.	\$60. to \$79.	\$80. to \$99.	\$100. to \$149.	\$150. or More	No Cash Rent	Median Gross Rents
Mesa	4,479	203	507	940	874	1,389	258	308	\$89.00
Garfield	1,404	21	98	231	303	426	179	153	98.00
Rio Blanco	<u>469</u>	<u>94</u>	<u>30</u>	<u>44</u>	<u>103</u>	<u>113</u>	<u>25</u>	<u>60</u>	<u>91.00</u>
Region Totals	6,347	318	635	1,215	1,280	1,928	451	521	\$92.66
	100%	5%	10%	19%	20%	30%	7%	8%	

Source: Adapted from Task Force '76, 1973, Housing, page 13.

Table VII-29  
NUMBER OF SUBSIDIZED HOUSING UNITS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE STATE OF COLORADO  
(1973)

County	For Low Income	For Moderate Income	Total Inventory 1973	Number of Total Inventory for Elderly	Percent of Total Inventory for Elderly
Garfield	30	60	90		
Mesa	10	415	425	186	44%
Rio Blanco		5	5		
Colorado	9,679	15,503	25,503	5,837	23%

Source: Colorado Division of Housing, 1973, pages 30, 88.



incomes and to shortages of low-cost housing. Increased numbers of mobile homes and multiple-family units and utilization of substandard dwellings seem to be the most common solutions.

#### D. Future Housing Requirements

In 1973 the State Division of Housing presented estimates for numbers of households and the housing inventory for 1978. Table VII-30 shows estimated numbers, net change, and percent change for the five-year period 1973 to 1978 for households and housing unit requirements. The net housing inventory requirements are only slightly higher than the estimated influx or formation of new households in the region. It is considered desirable for a community to have the number of housing units exceed the number of households, or occupied housing units, by a reasonable amount to allow for some options in housing for the buyer or renter. If only the required housing and no more is filled, the percent of unoccupied housing would be less than 1 percent in all three counties. This rate can be compared to the percent of unoccupied housing in 1970 which was highest in Rio Blanco County at 24 percent and lowest in Mesa County at 7 percent (See Table VII-8). Furthermore, as earlier noted, not all unoccupied housing is generally available for rent or sale.

Projections for households are based on such things as general population growth trends and anticipated economic conditions. Any projection would have to be adjusted should any major change take place in external factors which would affect population growth or the economy of the area.

Figures for estimated housing requirements do not, of course, indicate estimates of oversupply or undersupply of actual housing inventory as of 1978. A sudden and substantial increase in households in some part of the region could lead to an undersupply of housing in a very short period of time as compared to a gradual population growth met by a gradual increase in building. On the other hand, an unrealistic assessment on the part of investors about economic possibilities for the future of the region could lead to an oversupply of housing, should speculative building take place where new households do not materialize. House values and rents can be expected to fluctuate substantially over the short term, in accordance with circumstances of gross over- or under-supply of housing.

Besides considering requirements for additional housing inventory to meet increases in household numbers, the Division of Housing has also presented estimates on the numbers of units which will need to be replaced in the five-year period. The total estimated units required between 1973 and 1978, including replacement of units counted in the 1973 inventory, is shown in Table VII-31.

The preceding discussion on housing requirements for 1978 is based on the assumption that older units would either be replaced or would

Table VII-30

**CHANGES AND ESTIMATED CHANGES IN NUMBER OF HOUSEHOLDS  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960-1970, 1970-1973, 1973-1978)**

County	Percent Change in Households 1960-1970	Estimated Percent Change in Households 1970-1973	Estimated Number of Households April 1, 1973	Estimated Number of Households April 1, 1978	Estimated Net Change in Households 1973-1978	Estimated Percent Change in Households 1973-1978	Estimated Annual Growth Rate Household
Garfield	26.5%	10.7%	5,450	5,750	300	5.5%	1.1
Mesa	14.7%	6.8%	18,700	20,800	2100	11.2%	2.2
Rio Blanco	-4.8%	1.1%	1,490	1,670	180	12.1%	2.4

Source: Adapted from Colorado Division of Housing, 1973, pages 22, 70-74, 79, 109.

**CHANGES AND ESTIMATED CHANGES IN YEAR-ROUND HOUSING INVENTORY  
IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1960-1970, 1970-1973, 1973-1978)**

County	Percent <sup>1</sup> Change in Housing Units 1960-1970	Estimated <sup>2</sup> Percent Change in Housing Units 1970-1973	Estimated Number of Housing Units April 1, 1973	Estimated Number of Req. Housing Units April 1, 1978(a)	Estimated Net Change in Required Housing Units 1973-1978	Estimated Percent Change in Req. Hous. Un. 1973-1978	Estimated Annual Rate Required
Garfield	29.0%	16.0%	6,315	6,645	330	5.2	1.0%
Mesa	14.0%	12.9%	21,226	23,456	2230	10.5	2.1%
Rio Blanco	4.7%	3.1%	1,879	2,074	195	10.4	2.1%

Notes: (a) Estimate of number of units which will be replaced is not included in the estimate of housing units required by 1978.

Sources: 1. U. S. Census, Census of Housing, 1960, 1970.

2. All other data adapted from Colorado Division of Housing, 1973, pages 22, 70-74, 114.

Table VII-31

PROJECTED HOUSING REQUIREMENTS BY TENURE FOR  
GARFIELD, MESA AND RIO BLANCO COUNTIES AND THE REGION  
(1973 - 1978)

County Tenure	Total	Number of Units Required (a)		Occupied Standard Unit Replacement	Occupied Substandard Unit Replacement
		Household Formation and In-Migration	Current and Future Vacancy Needs		
Garfield	560	300	30	40	190
Owner	335	210	10	15	100
Rental	225	90	20	25	90
Mesa	3,210	2,100	130	100	880
Owner	2,050	1,500	50	30	470
Rental	1,160	600	80	70	410
Rio Blanco	280	180	15	5	80
Owner	188	140	5	3	40
Rental	92	40	10	2	40
Region	4,050	2,580	175	145	1,150

Note: (a) Projections of housing requirements to meet household formation and immigration demands and future vacancy needs are based on a projected five-year population increase of 425,000 persons (85,000 persons per year). Higher or lower projections of population increases will necessarily increase or decrease these portions of the overall requirements. If, for example, population increases are assumed to total 500,000 persons during the five-year period (100,000 persons per year), approximately 27,500 additional housing units will be required during the next five years (5,500 units per year) to supplement the household and vacancy requirements presented herein.

Source: Colorado Division of Housing, 1973, page 114.

continue to be utilized rather than destroyed without replacement. However, the fact that a certain proportion of units in any one year will need to be replaced can be an important factor. It is probable that housing units will be replaced when housing is in very short supply and not necessarily when the demand is first indicated. In general, this would seem to be the current situation in the three county region.

A description of the current housing situation in Rifle and Meeker will be given in the Impact volume accompanying this one. The kind of housing and availability will be covered in detail for these two cities as they are expected to receive the most direct impact from construction and operation of Tract C-b.

---

CHAPTER VIII

MUNICIPAL SERVICES

---



## CHAPTER VIII      MUNICIPAL SERVICES

### A.    Introduction and Summary

This chapter gives basic information on the current state of municipal services including education, transportation, power and utilities, fire, police, ambulance, water, sewer, solid waste disposal, health, hospitals and public welfare. Where possible, information is presented on the capacity of a facility or program relative to present demands made upon it.

Services in the three counties are owned and operated by a variety of entities: private corporations, special districts, municipal and county governments, and state and federal agencies. The multiplicity of operating and governing authorities, which characterize many of the three county region's services, developed as a result of both formal and informal cooperative agreements between counties and localities. This is particularly true in the areas of education, fire, police and ambulance service, and health and hospitals. The marginal nature of some local facilities has necessitated cooperative agreements to make possible the provision of service of sufficient scope and quality.

The educational system within Garfield, Mesa and Rio Blanco counties has changed very little in recent years, although some improvements in curriculum and facilities have been made. Enrollment in the eight school districts of the region has remained static or declined slightly over the past decade. Classroom space in the larger towns is near or beyond capacity, while in some of the smaller districts facilities are presently operating below design capacity. In addition to needed expansion of many facilities, approximately one-third to one-half of the school buildings are thirty years old or older and will require renovation or replacement in the near future.

Curricula in the three county region have improved somewhat in recent years, with new emphasis being placed on vocational training at the high school level. Cooperative programs with higher education facilities have also created opportunities for students to utilize more sophisticated and newer equipment. Financing new educational facilities continues to be a problem throughout the region. Public approval of bond issues is difficult to obtain and revenues generally have failed to meet new demands. This is because of the existing lag between the time funds are needed and the time they can be collected.

Because of the topography of Garfield, Mesa and Rio Blanco counties, ground transportation within the region is limited to a small number of primary corridors. These are the Colorado River Valley, the White River Valley and the corridor along the eastern edge of the Piceance Creek Basin at the foot of the Grand Hogback. Transportation systems connecting with points outside the region include air service from Grand Junction, rail service from Garfield and Mesa counties, and truck, bus and automobile travel via numerous interstate, state and local highways.



Interstate 70, which borders the region on the south, is scheduled for completion by the mid-1980's. Public transportation can be generally characterized as offering better service to and from points outside than within the region. Private automobile travel is the primary form of transportation in the area. Mass transit is limited to minor bus service.

Electricity and gas for the region are provided by eight electrical suppliers and four gas companies. Public Service Company of Colorado is the main supplier of both types of energy. Although generation and transmission systems for both gas and electricity are being continually expanded, future capacities are being planned on the basis of historical growth patterns and do not include future energy development. While the increased demands brought on by normal population growth will be easily met, any major demand increases could cause a severe strain on the utility systems. Because of the large capital investment necessary, expansion on the basis of projected development is economically impractical. New gas supplies are becoming increasingly difficult to find in the region and thus demands for gas may become a problem.

Fire, police and ambulance services in the three counties generally provide better coverage in the towns than in the rural areas. While police departments provide generally good service to the incorporated areas, sheriff's departments of comparable size and extremely limited equipment must patrol extensive rural areas trying to attain similar efficiency. Volunteer fire departments provide all fire protection for the counties, except for the professional department serving Grand Junction. Although cooperative agreements between towns enable some coverage of rural areas, service in those areas is generally marginal because of inherent geographical problems. Ambulance service, usually maintained by fire departments, is characterized by similar difficulties. Continued population growth at current rates will necessitate both manpower increases and, eventually, a change to full-time professional departments in all three service areas.

Many water and sewer systems in the region are currently operating at or over design capacity. Minimal EPA standards for sewer discharge have brought all local systems up to at least a secondary level of treatment. In many of the larger towns municipal water systems also have been recently improved to provide greater distribution and storage capacities. Further expansions of both types of service are in various stages of planning or construction in most of the major municipalities. Much of the financing of the improvements has come, in part, from federal sources, including the EPA and the EDA. Future design capacities of these new systems will either accommodate major population increases or permit modular expansion. Thus, while present water and sewer systems are, in many cases, being overextended, the next few years should see the implementation of upgraded systems able to meet the greatly increased demands of future population growth.

Sufficient hospital and nursing homes are available to meet current needs in most of the region. Health care is funded by private, municipal



and church facilities. A great deal of interdependency exists among counties, towns and private groups.

Welfare services are administered primarily through the counties. However, they are funded by state, federal and county governments.

Somewhat more recent and more specific information concerning municipal and human services in Rifle and Meeker is given in the Impact volume accompanying this one. Discrepancies exist in the information due primarily to the differing times at which data was gathered.

## B. Education

### 1. Organization of School Districts

There are eight public school districts in the three county area: three districts each in Mesa and Garfield counties and two districts in Rio Blanco County. The districts were created locally and are quite dissimilar in terms of physical size and student enrollment (see Table VIII-1 and Figure VIII-1). Each district is managed by a board of administrators hired by the school district's locally-elected Board of Education. Each district is subject to the body of rules and regulations promulgated by the Colorado Department of Education.

#### a. Revenue Base

The authorized revenue base for each district consists of local property taxes and state equalization revenues as provided under the Colorado School Finance Act. On an average throughout the state, approximately 65 percent of local property tax revenue goes to schools. Property taxes and state equalization revenues constitute approximately 80 percent of a district's total revenue. The remaining 20 percent of the general school revenue fund comes from local mill levies, special state funds and federal revenues. Increases in revenues can be achieved by increasing any of the sources mentioned.

#### b. Student Enrollment

Student enrollment has been relatively static in the region over the past ten years. In three of the districts, enrollment dropped from 1974 to 1975 (Plateau Valley 50, Meeker RE-1, Rangely RE-4). In four districts (Rangely RE-4, Meeker RE-1, Plateau Valley 50 and Garfield RE-2), the enrollment figures are below those of 1965 (see Table VIII-1).

There were 19,646 students enrolled in the eight districts on the closing day of the 1974-75 academic year. Mesa County accounted for approximately 69 percent of the total (13,543), Garfield County had 25 percent (4,817) and Rio Blanco County had six percent (1,286). The average pupil/teacher ratio in the county in 1974-75 was 22.2:1 in Mesa County, 21.4:1 in Garfield County and 19.7:1 for Rio Blanco County (see Table VIII-2). The average per student expenditure in the counties

Table VIII-1  
CLOSING DAY MEMBERSHIP BY SCHOOL DISTRICT IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1964-65 - 1974-75)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
<u>Mesa County</u>											
DeBeque 49J1	111	114	126	140	133	119	122	115	127	140	143
Plateau Valley 50	338	315	291	272	270	292	285	318	285	293	276
Mesa Valley 51	12,104	12,104	12,009	12,248	12,444	12,940	13,349	13,072	12,841	12,804	13,124
<u>Garfield County</u>											
Roaring Fork Re-1	2,232	2,559	2,698	2,778	2,766	2,905	3,044	3,012	3,128	3,017	3,148
Garfield Re-2	1,486	1,561	1,472	1,391	1,350	1,350	1,381	1,383	1,310	1,385	1,483
Grand Valley 16	139	168	177	141	138	164	180	179	154	160	186
<u>Rio Blanco County</u>											
Meeker Re-1	712	703	713	702	669	639	636	664	651	700	696
Rangely Re-4	813	779	809	817	797	704	647	630	612	624	590

Source: Colorado Department of Education Statistical Series No. 75-4, 1975, pages 35, 40, 43-44.

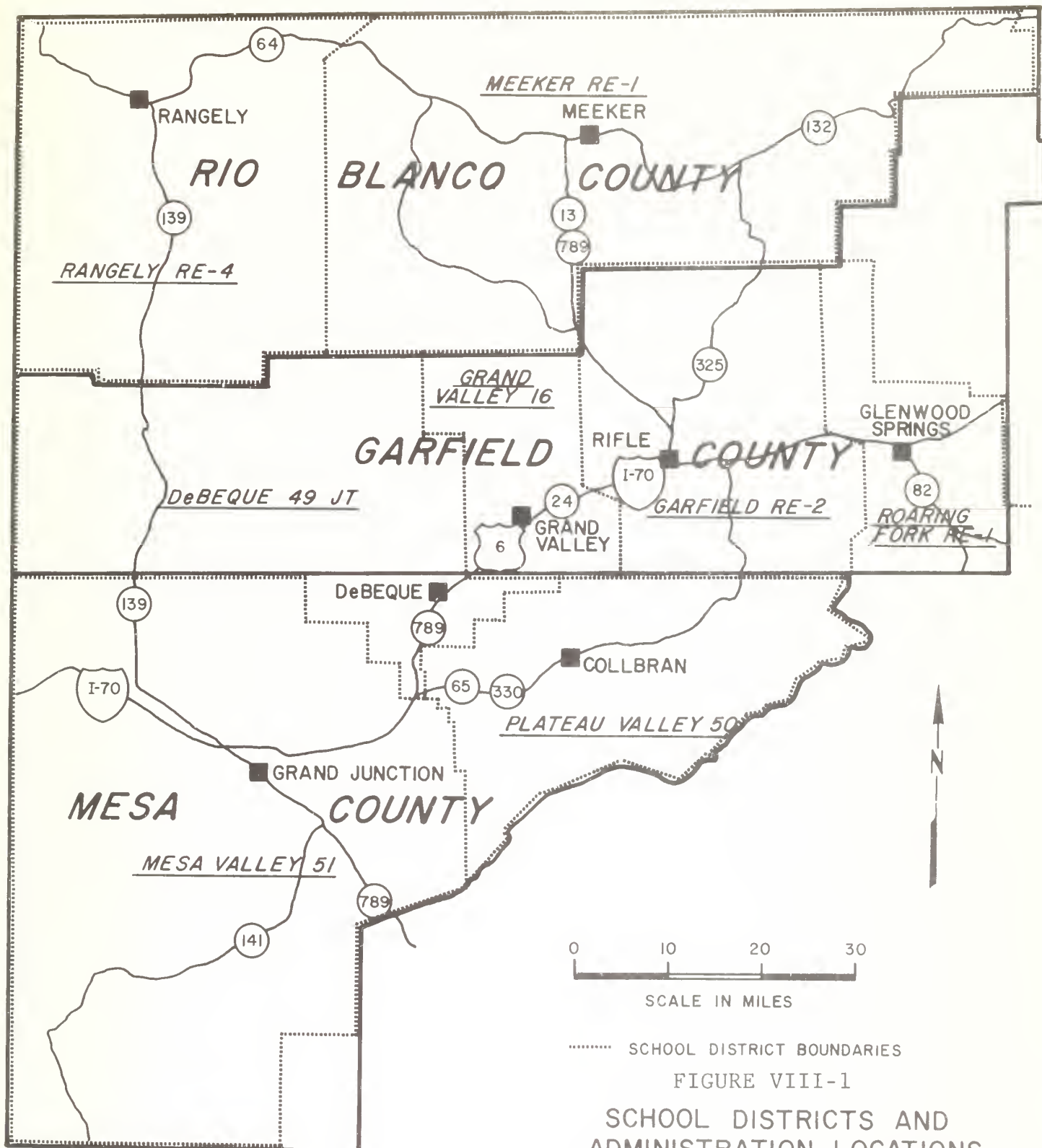


FIGURE VIII-1  
SCHOOL DISTRICTS AND  
ADMINISTRATION LOCATIONS  
RIO BLANCO, GARFIELD AND  
MESA COUNTIES, COLORADO

Source: Task Force '76, 1973  
Housing, pgs. 13-15.

Table VIII-2

PUPIL MEMBERSHIP AND RELATED INFORMATION BY DISTRICT SCHOOL FOR  
GARFIELD, MESA, AND RIO BLANCO COUNTIES  
(Fall, 1974)

County District School	No. of Schools	Total Revenues	Total Expenditures	Classroom Teacher Turnover Rate	1973-74 Annual Dropout Rate	Fall 1974 No. of Courses Offered	Fall 1974 Pupil/ Teacher Ratio
<u>Garfield County</u>							
<u>RE-1 Roaring Fork Elementary</u>	7	\$2,847,967	\$2,622,843	12.9%	5.7%		22.3
Basalt Elementary							29.3
Basalt Jr./Sr. High					7.0%	49	20.2
Carbondale Elementary							24.8
Glenwood Springs Elementary							25.0
Glenwood Springs Jr. High				1.0%		26	25.2
Glenwood Springs Sr. High				9.3%		94	23.6
Roaring Fork Jr./Sr. High				2.6%		90	22.2
<u>RE-2 Garfield</u>	6	1,509,949	1,550,770	18.6%	7.9%		19.9
Esma Lewis Elementary							19.1
New Castle Elementary							30.4
Silt Elementary					1.5%	22	27.4
Rifle Jr. High					12.3%	78	15.3
Rifle Sr. High					0.0%	25	22.2
Riverside Jr. High							21.6
<u>16 Grand Valley</u>	2	307,079	263,958	16.7%	2.4%		10.7
Grand Valley Elementary							11.5
Grand Valley Undergraduate					2.4%	38	13.0

Table VIII-2 (Continued)

County District School	No. of Schools	1973-74		Classroom Teacher Turnover Rate	1973-74 Annual Dropout Rate	Fall 1974 No. of Courses Offered	Fall 1974 Pupil/ Teacher Ratio
		Total Revenues	Total Expenditures				
49 JT De Beque De Beque Elementary De Beque Undiv.	2	\$ 202,675	\$ 235,364	9.1%	0.0%		10.0 16.2 10.8
50 Plateau Valley Plateau Valley Elem. Plateau Valley 4 Year	2	350,382	325,720	0.0%	1.4% 2.1%	70	17.0 20.8 20.2
51 Mesa Co. Valley Appleton Elementary Broadway Elementary Clifton Elementary Columbine Elementary Columbus Elementary Emerson Learning Disab. Ct. Fruita Elementary Fruitvale Elementary Gateway School Lincoln O.M. Elementary Lincoln Park Elementary Loma Elementary	31	13,681,866	13,045,459	8.9%	6.6%  6.5%		22.6 25.4 28.0 25.1 21.5 28.2  27.4 28.3 5.6 32.9 36.5 24.0

Table VIII-2 (Continued)

County District School	No. of Schools	1973-74		Classroom Teacher Turnover Rate	1973-74 Annual Dropout Rate	Fall 1974 No. of Courses Offered	Fall 1974 Pupil/ Teacher Ratio
		Total Revenues	Total Expenditures				
51 Mesa Co. Valley (con't.)							
Nisley Elementary							
Occupational Center Sp. Ed.				9			28.9
Orchard Mesa Jr.			0.0%	39			24.1
West Jr.			0.5%	51			21.8
Central Sr.			8.3%	116			17.8
Fruita Monument Sr.			15.4%	126			20.3
Grand Junction Sr.			7.3%	127			22.2
Palisade Jr., Sr.			3.2%	26			23.3
R5 Project Jr., Sr.			51.8%	40			17.1
Orchard Avenue Elem.							20.5
Pomona Elementary							28.0
Riverside Sp. Ed. Elem.							8.3
Scenic Elementary							24.2
Shelley Elementary							29.7
Taylor Elementary							28.8
Tope Elementary							26.1
Bookcliff Jr.					0.3%	50	26.5
East Jr.					1.7%	63	22.6
Fruita Jr.					0.4%	28	24.6

Table VIII-2 (Continued)

County District School	No. of Schools	1973-74		Classroom Teacher Turnover Rate	1973-74 Annual Dropout Rate	Fall 1974 No. of Courses Offered	Fall 1974 Pupil/ Teacher Ratio
		Total Revenues	Total Expenditures				
RE 1 Meeker	4	\$ 935,747	\$ 882,785	24.3%	1.1%		19.7
Meeker Elementary							22.8
Rock Elementary							12.0
Meeker Jr.					0.0%	21	33.1
Meeker Sr.					1.8%	63	22.2
RE 4 Rangely	3	1,164,619	1,105,195	7.5%	8.6%		15.1
Rangely Elementary							16.2
Rangely Jr.					16.7%	23	22.0
Rangely Sr.					3.6%	63	14.5

Source: Colorado Department of Education, Consolidated Report, 1975, pages 71-73, 110-114, 139-140.



in 1974 was \$1,373 in Mesa County, \$2,271 in Garfield County and \$1,466 in Rio Blanco County. As indicated by Table VIII-3, the pattern of expenditures shows that, generally, the smaller the district enrollment, the larger the per student expenditure.

### c. Facilities and Curriculum

The three county region has a total of 57 schools: 15 in Garfield County, seven in Rio Blanco County and 35 in Mesa County. Approximately one-third of the buildings have been built since 1960, one-third between 1960 and 1970 and one-third were built before 1940 (see Table VIII-4). According to the State's Impact Report, the curriculum in the nine school districts is generally traditional. However, the Report considers the schools are doing an adequate job of meeting the academic needs of the children in the area.<sup>1</sup>

In the larger junior high schools, pre-vocational training is available in a variety of classes, but in the smaller junior high schools these opportunities are limited. Electives are offered in several of the larger schools in addition to the traditional courses in language arts, mathematics, science and social studies. Electives in the larger schools are also somewhat limited, although, in some of the schools, extensive programs are offered in music, art, shop and typing. Consolidation could provide better access to facilities. It could also provide economies of scale that could increase electives and allow expansion of the school curriculum in the eight districts.

As with the junior high schools, the comprehensiveness of the senior high curriculum depends on enrollment, the budget and cooperative use of facilities with colleges or other school districts. Student schedules vary from traditional to modularized.

A study of curricular offerings at each of the senior high schools reveals fairly solid programs in traditional academic subjects, namely, English, mathematics, sciences and social studies. The larger senior high schools tend to offer a greater number of electives, but all the schools cover basic subjects in an adequate manner. There is greater variation between smaller and larger schools in terms of aesthetic, business, trade, technical and vocational areas of the curriculum, as well as in the number of foreign languages offered and the quality of the language laboratory facilities. Driver education facilities in the schools also vary. For example, some programs offer a complete range of equipment and some can provide no more than one car.

Vocational training, including career education, trade, technical and industrial education, distributive education and business education,

---

1. The following discussion about curricula in schools of the region is taken from Office of the Governor of Colorado, IMPACT III, 1974, pgs. III/A/35 - III/A/33.



Table VIII-3

COMPARISON OF ENROLLMENT, PER STUDENT EXPENDITURE, AND  
MILL LEVY FOR ALL DISTRICTS IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1974)

District	Enrollment	Per Student Expenditures	Mill Levy
De Beque 49 Jt.	138	1,816	47.55
Grand Valley 16	186	1,688	68.79
Plateau Valley 50	288	1,193	37.19
Rangely RE-4	623	1,498	20.42
Meeker RE-1	686	1,433	38.05
Garfield RE-2	1,501	1,165	45.44
Moffat County RE-1	2,009	1,128	47.19
Roaring Fork RE-1 (J)	3,141	960	38.60
Mesa County Valley 51	13,223	1,110	46.68

Source: Office of the Governor of Colorado, IMPACT, III, 1974, Pages III/A/39 - III/A/150.

Table VIII-4  
AGE OF EXISTING SCHOOL BUILDINGS BY DISTRICT IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1971)

County and District	Before 1900		1900-1920		1921-1940		1941-1960		1961 to Date		Total
	Elem.	Second.	Elem.	Second.	Elem.	Second.	Elem.	Second.	Elem.	Second.	
Mesa County											
49 Jt. DeBeque	-	-	-	-	-	-	-	-	-	-	-
50 Plateau Valley	-	-	-	-	-	-	-	-	-	-	-
51 Mesa Valley	-	-	3	-	8	1	9	1	5	2	29
Total											
Garfield											
RE-1 Roaring Fork	-	-	-	-	1	-	-	1	6	3	
RE-2 Garfield	-	-	-	-	-	1	1	1	-	-	
16 Grand Valley	-	-	-	-	1	1	-	-	-	-	
Total											16
Rio Blanco											
RE-1 Meeker	1	-	-	-	-	2	3	1	-	-	
RE-4 Rangely	-	-	-	-	-	-	1	1	-	1	
Total											10
Oil Shale Region Total	1	-	3	-	10	5	14	5	11	6	55
(2 Built Since 1971)											

Source: Task Force '76, 1973, Education, page 17.

tends to be an area of great concern in most of the school districts. In conjunction with facilities at Mesa College and Colorado Mountain College, several of the districts are currently offering career oriented training. However, expansion of Mesa College and its change to a four-year program may make it difficult for future cooperative use of vocational facilities at the College. Similar changes may also occur at Colorado Mountain College at some time in the future.

Currently, some of the small senior high schools offer only general shop and basic trade and industrial introduction courses. At the same time, the larger schools offer a broad range of choices including electrical shop, welding, machine shop, auto mechanics, work study, drawing, homemaking and distributive education classes. Business education is another area in which the large schools offer a broad range of courses such as typing, accounting, office procedures, secretarial preparation and personal finance. In smaller schools, business education offerings tend to be limited to typing and one or two other courses. Teachers in the smaller schools are forced by circumstances to teach five or six courses with perhaps as many preparations each day. Such teaching loads can have some effect on the quality of teaching and learning.<sup>1</sup>

## 2. Projections

Enrollment in the region's schools has been relatively static. However, in recent years, some schools have had declining enrollments while others have maintained a steady growth. The increases and decreases within districts have not occurred within any particular age or grade group, but have been spread uniformly over the entire spectrum of kindergarten through 12th grade. Several of the districts, particularly Garfield RE-2 (Rifle), Roaring Fork RE-1 (Glenwood Springs), Mesa County Valley 51 (Grand Junction) and Moffat County RE-1 are either overcrowded now in terms of classroom space, or will be overcrowded within two years. This projection is based on the present rate of growth without any substantial industrial development in the area. Other districts, namely, Rangely RE-4, DeBeque 49 JT, and Grand Valley 16 are presently in the enviable position of having large numbers of classrooms and other facilities available. The two remaining districts, Meeker and Plateau Valley, lie between these extremes (see Table VIII-5).

While several districts presently have adequate numbers of classrooms, approximately one-third to one-half of the school buildings are 30 years old or older and will require some improvement or replacement within the next three to four years. Another problem, that of funding new facilities, faces nearly every school district in western Colorado. Even with the

---

1. Office of the Governor of Colorado, IMPACT, III, 1974, pg. III/A/ 37

Table VIII-5  
EXISTING EDUCATIONAL FACILITIES BY SCHOOL DISTRICT IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES

School District	74.75 ADA/ Entitlement	Per ADA(a) Expenditure	Total Expenditure	10/74 Actual Enrollment	Certified Staff	Pupil/Staff	Total Rooms	(c)Capacity Pupil/Room	Capacity of Staff	(b)Excess Pupil Capacity of Room
Roaring Fork RE-1	2,917	\$ 960	\$ 2,800,725	3,141	169	18.6	146	21.5	3,400	None
Garfield RE-2	1,313	1,165	1,529,490	1,501	93	16	84	17.9	1,870	176
Grand Valley 16	148	1,688	249,881	186	19	9.8	14	13.3	385	93
De Beque 49 Jt.	125	1,816	227,000	138	14	9.1	14	9.1	282	152
Plateau Valley	275	1,193	328,197	288	22	13.0	18	16.0	445	72
Mesa County Valley	11,877	1,110	13,187,385	13,223	701	18.9	451	29	14,085	None
Meeker	637	1,433	913,090	679	45	15.1	44	15.4	907	202
Rangely RE-4	612	1,498	917,000	623	50	12.5	65	9.6	1,007	676
Moffat County RE-1	1,778	1,128	2,006,119	2,009	125	16.1	99	20.3	2,515	None
TOTAL/AVE.	19,682	\$1,126	\$22,158,887	21,788	1,238	17.6	935	23.3	24,896	1,371

- NOTES: (a) Based on the following criteria: One teacher for each 25 children  
One service type certified professional for each 8 teachers, i.e. Nurse, counselor, speech correctionist  
One administrator for each 14 teachers
- (b) School building authorities recommend 20 pupil stations per classroom for all K-12 building projections. Roaring Fork RE-1 has passed a new bond issue in the amount of \$4,026,000.00 the districts new total bond redemption fund levy is 11.7 mills. The building program includes a new building in each Basalt and Carbondale plus additions to the Glenwood Springs buildings. This action eliminates immediate need for additional buildings as indicated in the study.
- (c) Average Daily Attendance

Source: Office of the Governor of Colorado, IMPACT, III, 1974, page III/A/148.

general improvement in the revenue situation made possible by the Colorado Public School Finance Act, school districts still must depend heavily on property taxes and other local revenues (see Table VIII-6). The inherent gap existing between increased valuation, and levying and actual collection of new revenues has severe impacts on growing school districts. Revenue increases often cannot keep pace with population increases, even where massive development and population influx do not take place. Compounding the situation is the fact that assessed valuations may fluctuate from year to year forcing school districts to raise their mill levies to meet earlier enrollments that no longer exist. For example, Table VIII-7 shows that the assessed valuation in Rangely is expected to decrease from 1975 to 1976.

Another aspect of the problem is the general ambivalence found in western Colorado about providing new school facilities for future enrollments financed locally through bonds and mill levy increases. Although resistance to financing new schools is not universal, as indicated by the bond issues for school construction recently passed by Roaring Fork RE-1 and Meeker, local reluctance to approve new bond issues has been particularly evident in Garfield RE-2. This reluctance also hinders maintenance of the present facilities.

It appears that several of the school districts need additional facilities now or will need them in the near future due to normal population growth. At least one of these districts presently faces funding problems in meeting present needs. The State's IMPACT Study pointed out the problem faced by the Garfield RE-2 district (Rifle) in 1974: "Several bond issues designed to finance urgently needed new construction have been defeated and there seems no present prospect that any will pass".<sup>1</sup>

### C. Transportation

#### 1. Air Service

The largest airport in the three county region is Walker Airport in Grand Junction. The airport is equipped for instrument landing and provides regular scheduled jet service from Denver and Los Angeles. The FAA and Weather Bureau are located at Walker Field. The other airport nearest the area which provides almost hourly service from Denver is Sardy Field Airport at Aspen. Rocky Mountain Airways and Aspen Airways provide commuter service into Aspen. The airport is equipped for instrument landing and is suitable for small private jets but not for commercial jet service. Although Walker Airport is closer to most towns in the region, the more frequent service into the Sardy Field Airport provides greater flexibility.

Air charter service also is available at small municipal airports

---

1. Office of the Governor of Colorado, IMPACT, III, 1974, pg. III/A/50

Table VIII-6  
CONSOLIDATED FINANCIAL INFORMATION ON SCHOOL DISTRICTS IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES

County District Budget Year	ADAE For Budget Year(a)	General Fund For State Equalization	MILL LEVIES			Representative Bond Redemption Fund	Capital Reserve Fund	Assessed Valuation	Assessed Valuation Per Attendance Entitlement	GENERAL FUND				State Equalization \$ Per Attendance Entitlement	Authorized Revenue Base (b)	
			Additional Levy SSDBRB	Local Vote	Total General Fund					Local Property Tax	Local \$ Per Attendance Entitlement	State Equalization				
Garfield County																
RE-1 Roaring Fork																
1973	2,952.3				33.20	6.68	2.00	\$34,271,220	\$11,608	\$1,137,804	\$ 385	\$ 820,215	\$ 278			
1974	2,917.9	30.00			30.00	4.60	4.00	37,393,590	12,666	1,121,808	379	1,092,056	369	\$ 750		
1975	2,908.8	31.11			31.10	11.70	4.00	42,287,640	14,492	1,315,147	451	1,135,618	389	840		
RE-2 Garfield																
1973	1,268.4				59.88	1.96	2.00	14,875,320	11,728	890,734	702	325,963	257			
1974	1,313.0	41.44			41.44		4.00	13,894,930	10,583	575,806	438	784,596	597	1,035		
1975	1,398.7	41.06			41.06	-	4.00	14,517,530	10,379	596,090	426	954,501	682	1,109		
16 Grand Valley																
1973	147.8				62.27	6.00	2.00	2,836,220	19,190	176,611	1,195	21,092	143			
1974	145.1	51.75	7.04		58.79	6.00	4.00	2,905,800	19,660	170,832	1,155	61,189	414	1,570		
1975	184.8	62.21			62.21	6.00	4.00	2,978,530	16,118	185,294	1,003	125,080	677	1,680		
Mesa County																
49 Jr. De Beque																
1973	110.4				44.06	5.60	1.00	\$ 3,641,000	\$32,980	\$ 160,423	\$1,453	\$ 8,832	\$ 80			
1974	124.8	44.60			44.60	3.00	-	3,596,420	28,817	160,221	1,283	44,479	356	\$1,640		
1975	132.5	46.57			46.57	1.03	-	3,801,300	28,689	177,026	1,336	55,535	419	1,755		
50 Plateau Valley																
1973	290.8				31.70	4.60	.50	5,355,980	18,418	169,785	584	55,042	189			
1974	271.7	33.19			33.19	3.50	.50	5,260,270	18,089	174,588	600	77,213	265	865		
1975	267.8	32.65			32.65	3.00	.50	5,480,560	20,171	178,940	659	79,839	294	952		
51 Mesa County Valley																
1973	12,274.1				57.68	5.81	2.00	107,700,550	8,775	6,212,168	506	3,987,741	325			
1974	12,060.6	36.90			36.90	5.73	4.00	111,985,420	9,124	4,132,262	336	7,192,254	585	922		
1975	12,211.2	37.25	1.38		38.63	4.00	4.00	122,806,450	10,057	4,744,013	388	7,705,511	631	1,020		
Rio Blanco County																
RE-1 Meeker																
1973	627.8				35.30	-	2.00	17,428,620	27,761	615,230	979	87,730	139			
1974	636.9	34.05			34.05	-	4.00	17,315,290	27,187	589,586	925	173,492	272	1,198		
1975	641.0	33.07	2.29		35.36	-	4.00	19,080,110	29,766	674,673	1,053	190,781	298	1,350		
RE-4 Rangely																
1973	585.5				16.92	4.46	1.60	39,848,960	68,060	674,244	1,151	46,840	80			
1974	611.7	14.81			14.81	3.61	2.00	49,536,370	80,981	733,634	1,199	72,474	118	1,317		
1975	568.4	10.29	1.29	.39	11.96	1.97	3.00	78,339,930	128,067	936,945	1,532	56,650	93	1,625		

NOTES: (a) ADAE is the Average Daily Attendance Entitlement, used to calculate the amount of state equalization funds to which a district is entitled.  
(b) The ADAE includes any increase granted by State School District Budget Review Board and/or a vote of the people.

Source: Colorado Department of Education, Consolidated Report, 1975, pages 170, 174, 177-178.

Table VIII-7  
ASSESSED VALUATION PRESENT AND PROJECTED BY SCHOOL DISTRICT  
FOR GARFIELD, MESA AND RIO BLANCO COUNTIES

District	1974 Assessed Valuation	1975 Assessed Valuation	1975/1974 % Increase	1976 Min. Assessed Valuation	1976 Max. Assessed Valuation	1976 Best Est. Assessed Valuation	1976/1975 Best Est. % Increase
Roaring Fork RE-1 (J)	37,393,588	42,287,642	13.1	42,500,000	50,000,000	45,332,352	7.2
Garfield RE-2	13,894,930	14,517,530	4.5	14,600,000	15,000,000	14,924,020	2.8
Grand Valley 16	2,905,800	2,978,530	2.5	2,966,000	3,525,000	3,000,000	0.7
De Beque 49 Jt.	3,596,420	3,798,870	5.6	3,837,000	4,012,000	3,850,000	1.3
Plateau Valley 50	5,260,270	5,480,560	4.2	5,382,000	5,705,000	5,600,000	2.2
Mesa County Valley 51	111,985,420	122,806,450	9.7	124,035,000	127,719,000	126,000,000	2.6
Moffat County RE-1	25,722,450	29,908,375	16.3	27,516,000	31,404,000	31,104,710	4.0
Meeker RE-1	17,315,290	19,080,110	10.2	19,300,000	20,856,000	19,652,503	3.0
Rangely RE-4	49,536,370	78,339,930	58.1	70,380,000	78,000,000	75,000,000	- 4.3

Source: Office of the Governor of Colorado, IMPACT, III, 1974, page III/A/ 31.



in Meeker, Rangely, Rifle, Glenwood Springs and Gateway. There is one private, unpaved landing strip, owned by General Petroleum, located near Piceance Creek in Rio Blanco County.

## 2. Railroads

The Denver and Rio Grande Western Railroad runs along Interstate Highway #70 and the Colorado River. The line runs through Glenwood Springs, Rifle, and Grand Valley and Grand Junction and provides both passenger and freight service. The most important function of the railroad is hauling freight, while passenger service is limited on the region's rail lines. Two branch lines run out of Grand Junction, one into Delta County and the other into Montrose County. Rio Blanco County has no railroad service.

## 3. Highways

### a. Major Routes

Figure VIII-2 shows major highways and roads in the region. There are three U.S. highways, one U.S. Interstate, ten State Highways and numerous county roads. Table VIII-8 lists main connection routes and distances between selected towns in the area.

### b. Construction Projects

Five construction projects are underway in the area, according to the Colorado State Highway Department (Table VIII-9). Interstate 70 in the western part of Colorado is presently incomplete. DeBeque Canyon and Glenwood Canyon are the primary sections of this highway currently not completed. DeBeque Canyon may be completed between 1980 and 1982 if construction contracts are let soon. The Glenwood Canyon section has not been approved; no design work has been done, and no contracts have been let at this writing. It is estimated that the section will be completed between 1981 and 1983 if location approval is granted in the near future. The Glenwood Canyon section will probably be the last major portion of I-70 to be completed in the State.

### c. Funding

Highways are funded at the State and Federal levels, largely through user taxes. Colorado State taxes are levied on the following: motor fuel, truck ton-mile, bus passenger-mile, various license and registration fees, and traffic fines and penalties. Federal taxes are levied on the following: motor fuel, new trucks, buses and trailers, vehicle tires and tubes, heavy vehicle use, parts and accessories and lubricating oils.

City streets and county roads also may be underwritten by user taxes. However, user funds are often supplemented by general levies. Highway funding is often complex. The Colorado Highway Division's Guidebook on Highway Funding (1970) provides the following information on federal aid



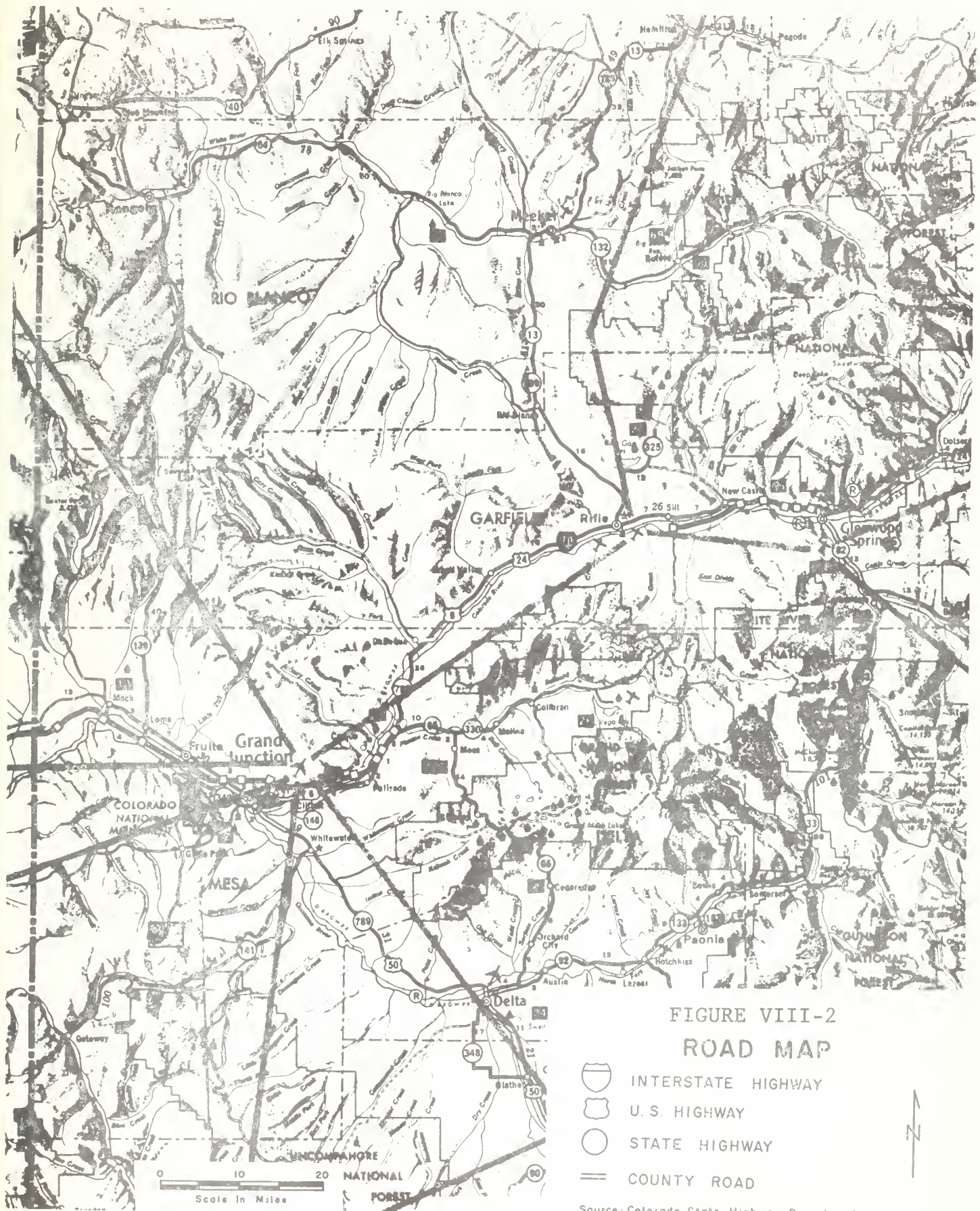






FIGURE VIII-2  
ROAD MAP

-  INTERSTATE HIGHWAY
-  U.S. HIGHWAY
-  STATE HIGHWAY
-  COUNTY ROAD

Source: Colorado State Highway Department

Table VIII-8  
DISTANCES AND ROUTES BETWEEN SELECTED CITIES IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES

Places	Routes	Distance (Miles)
Grand Junction - Rangely	I-70 to Colorado 139	92
Grand Junction - Rifle	I-70 (incomplete), U.S. 6 and 24	62
Rifle - Meeker	Colorado 13	41
Rifle - Glenwood Springs	I-70 (incomplete), U.S. 6 and 24	26
Meeker - Rangely	Colorado 64	55
Rifle - Grand Valley	I-70 (incomplete), U.S. 6 and 24	16
Rio Blanco - Meeker	Colorado 13	22
Rio Blanco - Rifle	Colorado 13	19

Source: Colorado Department of Highways, Construction Bulletin, 1975.

Table VIII-9  
CURRENT HIGHWAY CONSTRUCTION PROJECTS IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(ROUTE, TYPE OF FACILITY, PROJECT NUMBER, LENGTH,  
TYPE OF WORK AND APPROXIMATE COMPLETION DATE)

Interstate 70: Multilane divided, Proj. 1 70-1 (43), 3.3 miles, grading, draining, structure and topsoil, July, 1976.
Interstate 70: Multilane divided, Proj. 1 70-1 (42) 96, 3.0 miles, grading, structures, topsoil, seeding and mulching, November, 1975.
Colorado 65: Two lane, Proj. RS 0065 (6), 2.3 miles, grading, structures, stabilizing, oil processing and seeding, July, 1976.
Interstate 70: Multilane divided, Proj. 1 70-1 (39), 3.2 miles, grading, structures, and seeding, August, 1975.
Interstate 70: Two lane connection, Proj. RF 013-1 (23), 0.2 mile, grading and structures, June, 1976.

Source: Colorado Department of Highways, Construction Bulletin, 1975, (issued monthly).

formulas:

"The amount of federal aid to any given state for its interstate system is based on need.

There are three criteria for federal aid on the primary highways, each accounting for a third of the funds allotted: the ratio of a state's area as compared to the total area of all the states, the ratio to that of the total U.S. population, and the ratio of its mileage of rural delivery and star mail routes to the national total.

Federal aid for secondary highways is allotted on the same basis, except that only rural population is considered along with the area and post road mileage.

For urban extensions of primary and secondary highways federal aid funds are divided among the states on the basis of urban population: the ratio of the state's total of residents in towns and cities of 5,000 or more population to the national total of such residents.

The above listed are the principal categories of federal aid to the states, all deriving from the federal highway trust fund. Roads through public lands and U.S. forests are occasionally financed from the U.S. Treasury, rather than the trust fund, and there are other exceptions from time to time.

Among the conditions attached to federal aid is one involving projects in cities whose population is 50,000 or more. Here, there must be a planning group representing the cities and counties involved, as well as the state, to advise and approve on proposed highway construction."<sup>1</sup>

The diagram in Figure VIII-3 shows the general pattern of highway funding approval as it is organized in the state. This procedure is complicated by interaction between levels of government. Figure VIII-4 shows how the State highway user tax fund is allocated in a typical fiscal year.

A breakdown of the anticipated Colorado Highway Budget for 1975-76 is shown in Table VIII-10. The State publication, Highway News, shows federal funds available for budgeting on construction in the current fiscal year beginning July 1 as \$31,750,836; matching state funds for construction as \$13,826,122; local and other matching construction funds as \$4,689,068; and State projects without federal aid as \$1,300,000.

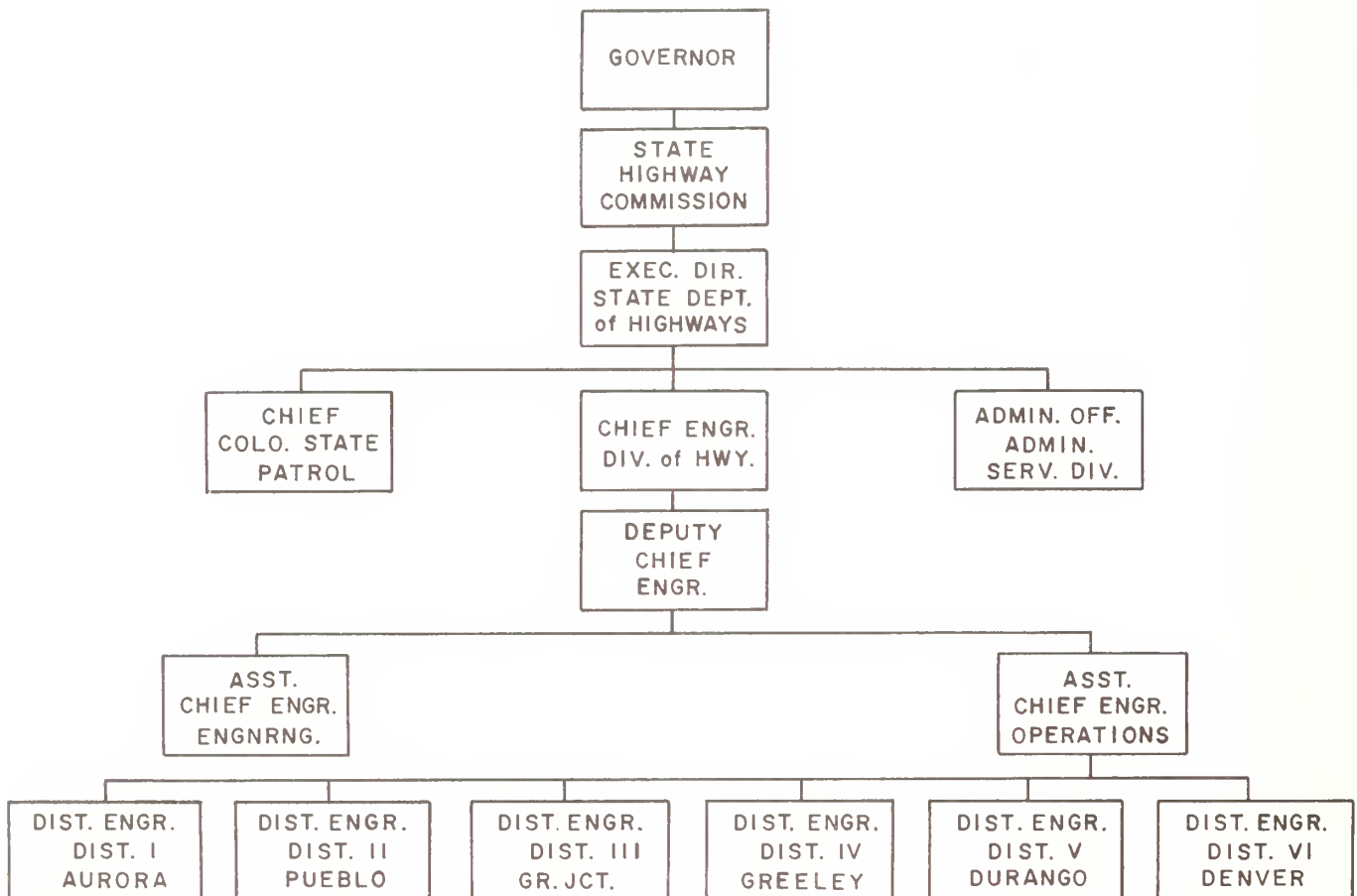
Table VIII-11 shows total receipts and balances for county roads in

---

1. Colorado Department of Highways, A Guidebook on Highway Funding, 1970, pg. 14



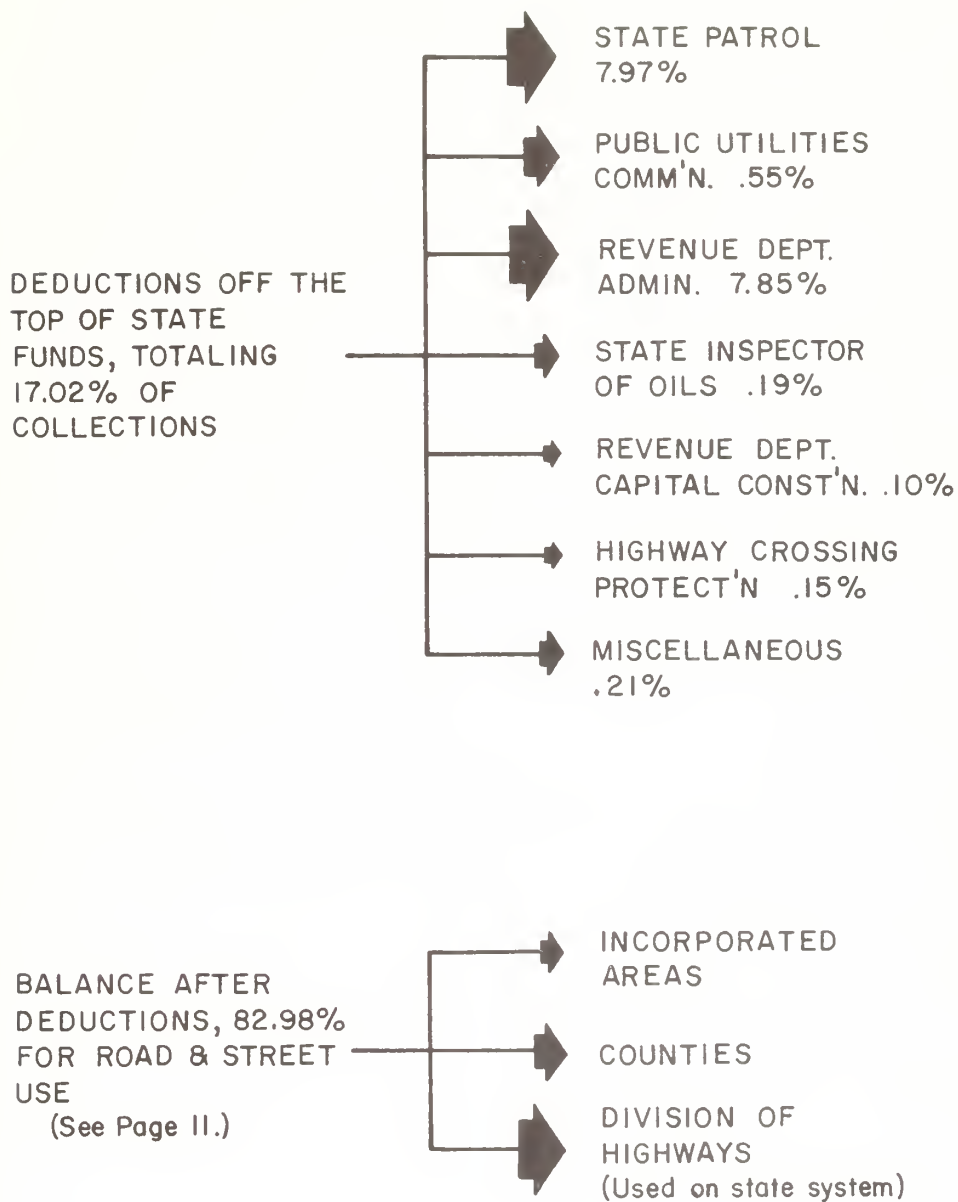
FIGURE VIII-3  
COLORADO HIGHWAY APPROVAL HIERARCHY



Source: Colorado Department of Highways, A Guidebook on Highway Funding, 1970, page 15.

FIGURE VIII-4  
DISTRIBUTION OF STATE HIGHWAY USER TAX FUND  
IN A TYPICAL FISCAL YEAR

---



---

Source: Colorado Department of Highways, A Guidebook on Highway Funding, 1970, page 5.

Table VIII-10  
CONSTRUCTION BUDGET CATEGORIES AND ANTICIPATED EXPENDITURES  
IN FEDERAL AID AND MATCHING STATE AND LOCAL FUNDS FOR COLORADO  
(1975-1976)

Road	Cost
Interstate	\$38,330,134
Rural Primary	\$16,916,210
Rural Secondary	\$10,115,217
Priority Primary	\$ 6,075,077
Urban Extensions	\$ 4,150,000
Urban	\$11,465,895
Planning and Research	\$ 2,068,699
Various Safety Improvements	\$ 4,840,494
Off-System Roads	\$ 5,636,648
Metro Planning Funds	\$ 409,501

Source: Colorado Department of Highways, Highway News, 1975, Pages 1-2.

Table VIII-11  
COUNTY ROADS  
LOCAL, STATE AND FEDERAL RECEIPTS AND BALANCES  
FOR GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1974)

	Garfield	Rio Blanco	Mesa
Total Receipts	\$ 936,208	\$1,012,759	\$1,690,296
Beginning Balance(a)	\$ 144,155	\$ 495,305	\$ 364,584
TOTAL RECEIPTS AND BALANCE	\$1,080,363	\$1,508,064	\$2,054,880

NOTES: (a) Balance changed from previous year's ending balance.

Source: Colorado Department of Highways, Annual Highway Report for 1974, pages 28, 32.

1974. Table VIII-12 shows expenditures and balances for county roads in 1974.

#### d. Construction Guidelines

The U.S. Department of Transportation has prepared a Federal Aid Highway Program Manual. The manual spells out procedures for conducting public hearings on highway construction. It also provides guidelines for consideration of social, economic and environmental affects of highway construction, as enumerated in Figure VIII-5. These regulations pertain to any work receiving Federal aid funding. Such considerations may well be involved in future highway construction with or without oil shale development in the region.

#### e. Traffic Counts

Mechanical traffic counters are located throughout the state. Four of these counters are located in or near the counties of the region. Table VIII-13 shows that traffic has increased in the counties between 1974 and 1975 roughly from five percent to 25 percent, depending upon the location.

#### 4. Bus Service

There are three lines operating in the region, each covering different routes. Continental Trailways runs three buses daily east and west on Routes #6 and #24 between Denver and Salt Lake City, two buses daily from Pueblo to Grand Junction and one bus daily from Durango to Grand Junction.

One bus runs daily from Grand Junction through Collbran, Molina and Mesa (The Plateau Valley Stage Line). The Wilderness Transit Company runs one bus daily roundtrip from Craig to Grand Junction. This run includes Rifle and Meeker. No other bus service is available in Rio Blanco County.

#### 5. Trucking Service

Table VIII-14 shows the thirteen trucking firms and their respective operating sources in the three-county area.

#### 6. Miscellaneous Services

The Yellow Cab Company provides taxi and airport limousine service in Grand Junction. Three national car rental agencies provide rental services at Walker Field and in Grand Junction. One national agency provides car rental services in Glenwood Springs.

#### D. Power and Utilities

##### 1. Overview of Regional Capacity

##### a. Electricity

Table VIII-12

COUNTY ROADS  
EXPENDITURES AND BALANCES FOR  
GARFIELD, MESA AND RIO BLANCO COUNTIES  
(1974)

	Garfield	Mesa	Rio Blanco
TOTAL EXPENDITURES	\$1,033,389	\$1,862,838	\$ 989,063
TOTAL EXPENDITURES AND BALANCE	\$1,080,363	\$2,054,880	\$1,508,064
ENDING BALANCE	\$ 46,974	\$ 192,042	\$ 519,001

Source: Colorado Department of Highways, Annual Highway Report for 1974, pages 30, 34.

Table VIII-13

AVERAGE DAY OF THE WEEK TRAFFIC COUNTS FOR FOUR STATIONS  
IN OR NEAR THE THREE COUNTY AREA  
(Actual Counts)

	Average Day of the Week Count	Rate of Change 6/1974 - 6/1975	Rate of Change
<u>Station 7 (East of Glenwood Springs)</u>			
June, 1975	6,541	+13.1%	+ 9.4% (1/74 - 6/74 - 1/75 - 6/75)
June, 1974	5,784		+10.2% (1/73 - 6/73 - 1/74 - 6/74)
June, 1973	5,728		
<u>Station 19 (South of Glenwood Springs)</u>			
June, 1975	8,005	+ 8.8%	+ 9.9% (1/74 - 6/74 - 1/75 - 6/75)
June, 1974	7,358		+ 7.3% (1/73 - 6/73 - 1/74 - 6/74)
June, 1973	7,264		
<u>Station 32 (West of Dinosaur)</u>			
June, 1975	1,800	+ 3.9%	+ 5.1% (1/74 - 6/74 - 1/75 - 6/75)
June, 1974	1,732		+10.8% (1/73 - 6/73 - 1/74 - 6/74)
June, 1973	1,731		
<u>Station 33 (West of Mack)</u>			
June, 1975	3,490	+27.9%	+24.7% (1/74 - 6/74 - 1/75 - 6/75)
June, 1974	2,748		- .6% (1/73 - 6/73 - 1/74 - 6/74)
June, 1973	3,321		

Source: Data from interview with Colorado Department of Highways, Traffic Investigation Division, August, 1975.



FIGURE VIII-5

DEPARTMENT OF TRANSPORTATION GUIDELINES FOR CONSIDERATION OF  
SOCIAL, ECONOMIC AND ENVIRONMENTAL EFFECTS OF HIGHWAY CONSTRUCTION

*"Social, economic, and environmental effects" means the direct and indirect benefits or losses to the community and to highway users. It includes such effects that are relevant and applicable to the particular location or design under consideration as to:*

- (1) regional and community growth including general plans and proposed land use, total transportation requirements, and status of the planning process,*
- (2) conservation and preservation including soil erosion and sedimentation, the general ecology of the area as well as manmade and other natural resources, such as: park and recreational facilities, wildlife and waterfowl areas, historic and natural landmarks,*
- (3) public facilities and services including religious, health and educational facilities; and public utilities, fire protection and other emergency services,*
- (4) community cohesion including residential and neighborhood character and stability, highway impacts on minority and other specific groups and interests, and effects on local tax base and property values,*
- (5) displacement of people, businesses, and farms including relocation assistance, availability of adequate replacement housing, economic activity (employment gains and losses, etc),*
- (6) air, noise, and water pollution including consistency with approved air quality implementation plans, PHWA noise level standards, and any relevant Federal or State water quality standards (as set forth in Sections 3 and 9 of Chapter 7, Volume 7 of the Federal-Aid Highway Program Manual, and*
- (7) aesthetic and other values including visual quality, such as: "view of the road" and "view from the road," and the joint development and multiple use of space.*

*This listing is not meant to be exclusive, nor does it mean that each effect considered must be given equal weight in making a determination upon a particular highway location or design (See paragraph 9).*

---

Source: U.S. Department of Transportation, Federal Highway Protection Program Manual, 1974.

Table VIII-14

## TRUCKING SERVICES IN GARFIELD, MESA AND RIO BLANCO COUNTIES

RIO BLANCO COUNTYMeeker

Harp Transportation Line

Tank, Vans, Flatbed, Dump Trailer, Livestock, Freight transfer dock facility, No Storage, Regular route scheduled freight service between Meeker and Rifle

Rangely

Harp Transportation Line

Freight transfer dock, City pickup and delivery trucks

Pollard Construction Co.

Oil field service/heavy equipment

GARFIELD COUNTY (Glenwood Springs)

Rio Grande Motorway

Regular route freight service, Straight truckload capacity, Freight transfer dock

Ephraim Freightways

Regular route freight service, Freight transfer dock

Don Warden Co.

Primarily livestock carrier, Heavy equipment, Wench truck service, Flatbed

MESA COUNTY (Grand Junction)

Rio Grande Motorways

Freight transfer dock

Ephraim Freightways

Regular route freight service, Freight transfer dock

Jamieson Truck Line

Heavy equipment, Ore, Tank, Wench trucks

Schooley Truck Line

Ore (only)

Ashton Truckline

Tank, Livestock, Flatbed, Heavy equipment

Litton Warehouse

Mayflower Moving, Storage

W.R. Hall Transportation

Specialize in heavy equipment, Cranes, Tank, Construction, Allied Van Line affiliate, Storage

Source: Task Force '76, 1973, Transportation, pages 4, 13, 20.

In the three county region there are eight companies and associations which provide electricity, either on a wholesale or retail basis, and four companies which provide gas. The eight electric companies and associations are:

- Moon Lake Electric Association (Roosevelt, Utah)
- White River Electric Association (Meeker, Colorado)
- Public Service Company of Colorado (Denver)
- City of Glenwood Springs (Glenwood Springs)
- Grand Valley Rural Power Lines (Grand Junction)
- Holy Cross Electric Association (Glenwood Springs)
- Delta-Montrose Rural Power Lines (Montrose)
- Colorado-Ute Electric Association (Montrose)

The four companies providing gas in the area are:

- Town of Rangely (Rangely)
- Greeley Gas Company (Denver)
- Public Service Company of Colorado (Denver)
- Rocky Mountain Natural Gas Company (Denver)

The largest providers of electricity are: Public Service Company, Colorado-Ute and Holy Cross, which buys its bulk power from Colorado-Ute. The largest gas provider is the Public Service Company, which also provides most of the electricity in Garfield and Mesa Counties. White River Electric Association provides electricity in Rio Blanco County, excepting the Rangely areas.

The major utility and power companies in the three counties indicate that they have made no provision for major oil shale development. All present plants, current upgrading programs, projected new plants and transmission lines are designed to provide the amount of power required to meet anticipated future demand in the area, based on historic use patterns and population increases.

Both Colorado-Ute and Public Service Company have stated that no facilities are being planned to provide energy for oil shale plants. In keeping with normal business procedure, no expenditures are expected to be made for new production on transmission facilities designed to provide power for energy development until the demand is proven. However, according to a spokesman from the Public Service Company, the overall electric power and utility capacity in the region, including both power generating and transmission facilities, substantially exceeds present demands.

#### b. Natural Gas

Natural gas is somewhat less plentiful than electrical power in the area. While gas companies are meeting present customer needs and adding moderately to stored reserves many new customers are presently awaiting service. Major new demands might face significant problems in the

immediate future.<sup>1</sup>

2. Production, Transmission and Sale of Electricity and Gas in Garfield, Mesa and Rio Blanco Counties

a. Garfield County

The City of Glenwood Springs owns its electric company which buys in bulk at wholesale rates from the Public Service Company of Colorado. The town buys gas from the Rocky Mountain Natural Gas Company. Rifle receives both its electricity and gas from the Public Service Company. Several other small towns, including Grand Valley, Silt and DeBeque, also receive power from the Public Service Company.

Other areas within the county receive power from the Grand Valley Rural Power Line and the Holy Cross Electric Association, both of which are members of the Colorado-Ute Electric Association and buy their power from Colorado-Ute on a wholesale basis. Holy Cross supplies power to most of the areas south of the Colorado River to DeBeque.

b. Mesa County

The town of Grand Junction receives electricity and gas from the Public Service Company. Other portions of Mesa County are provided electricity by the Delta-Montrose Rural Power Lines, and the Grand Valley Rural Power Lines. Gas is provided in other areas outside of Grand Junction by the Rocky Mountain Natural Gas Company.

c. Rio Blanco County

The town of Rangely receives its electricity from the Moon Lake Electric Association located in Utah. Rangely receives its gas from the Town of Rangely, a municipal system that buys bulk gas from the Western Slope Gas Company. The Town of Meeker receives its electricity from the White River Electric Association, a member of Colorado-Ute. Meeker buys gas from the Greeley Gas Company.

3. Major Power Companies in the Area

Public Service Company and the Colorado-Ute Association provide most of the electrical power to the three county area. Public Service Company and the Rocky Mountain Natural Gas Company provide most of the natural gas to the area. This section focuses on the statewide and regional production, transmission and sales capabilities of these organizations.

- 
1. Much of the information on the utility and power companies was provided by spokesmen. These people and their respective companies are listed in the sources section at the end of the report.

a. Electricity

Headquartered in Denver, Public Service is the largest single producer and provider of electrical and gas power in Colorado. The company has ten divisions across the state. The amount of electricity generated by Public Service Company in 1974 was 11,133,657,000 kilowatt-hours (k-Wh). The total state-wide system capability in that year was 2,538,350 kilowatts (2,538 megawatts). The generation of power is not spread equally across the ten divisions of the state. In the three county region, Public Service Company serves most of the Colorado River Valley, commonly called Grand Valley, north of the Colorado River.

Public Service Company has two generating plants in the region. The first plant, Cameo, is located on the Colorado River in DeBeque Canyon. The Cameo Station is capable of generating 79 megawatts of electricity. The other station, the Shoshone, on the Colorado River in Glenwood Canyon, is capable of generating 12.5 megawatts. The company also has a gas turbine facility at Fruita, which can generate 25 megawatts of electricity.

In addition to these generating facilities, Public Service Company owns several overhead power transmission lines in this area. One line, which is capable of transmitting 230 kilovolts, runs from Cameo through Malta to Denver. Another line, which transmits 69 kilovolts, runs from Glenwood Springs to Grand Junction. The Bureau of Reclamation owns a 230-kilovolt line which connects to the Public Service line at Rifle and which runs from Hayden, in the Craig area, to the Colorado River Storage Project. In addition, the proposed 230-kilovolt line which will be built and operated by the Colorado-Ute Company, running from Hayden to Malta, will tie in at Malta to the transmission line facilities of the Public Service Company.

While no precise figures are available on the amount of power generated and transmitted in the area by the Public Service Company, the company estimates that ample power exists to fill the region's demands in the near future, in the absence of major developments such as oil shale or other energy resources.

Colorado-Ute is a cooperative which provides bulk power to several small power companies in the state. The Association provides power to three companies in the three county region: Grand Valley Rural Power Lines, Holy Cross Electric Association and White River Electric Association. At the end of 1974, Colorado-Ute had a capacity of 360 megawatts. This figure is approximately 40 percent higher than the capacity in December of 1973 (252 megawatts). It includes power bought from the Bureau of Reclamation and other power companies in addition to that produced by generating plants owned by Colorado-Ute, although the present capacity may be somewhat inflated in terms of actual practice.

Two generating plants in the region are owned exclusively by Colorado-Ute. The first, Nucla Station, located at Nucla in Montrose County, is



capable of producing 39 megawatts of power, while the second, Hayden Station #1, located in Routt County, produces 168 megawatts of power. These production figures are net capacities. Hayden Station #1, part of the production of which is committed until January 1, 1976 to the Bureau of Reclamation in the Salt River Project, recently has been upgraded and now is capable of producing approximately 180 megawatts. The remaining power is purchased by Colorado-Ute and held for sale.

In addition to the above, there are two facilities either under construction or ready for construction. The first is Hayden Unit #2, located next to the Hayden Station Project. This facility will be capable of producing 250 megawatts. The Salt River Project, an Arizona-based power company, owns 80 percent of the power production, and Colorado-Ute owns the remaining 20 percent, or 50 megawatts. This facility is scheduled to begin operation in 1976. The 80 percent, or 200 megawatts, owned by the Salt River Project, will be exchanged with the Bureau of Reclamation, to use for its preference customers (primarily municipal customers) who use the Colorado River Storage Project, in return for which the Salt River Project will receive an equal amount from the Glen Canyon Dam. This type of arrangement which is known as a "displacement agreement", alleviates the necessity of constructing several overhead power transmission lines. The percentage of ownership of the plant will change in the future, with Colorado-Ute's interests increasing to 50 percent, or 125 megawatts, in 1982.

The second project is the Yampa Project, located at the Craig Station in Moffat County. This facility will consist of two 380-megawatt units. The first is scheduled for operation in the spring of 1978, and the second for spring, 1979. Colorado-Ute will be the project manager and operating agent. The ownership of this facility is as follows: Colorado-Ute, 29 percent; Salt River Project, 29 percent; Tri-State Generation and Transmission Association (located in North Glenn), 24 percent; and Platte River Power Authority (which supplies Fort Collins, Longmont, Loveland and Estes Park), 18 percent. The power owned by the latter two entities will be transmitted by the Hayden-Ault line. This facility is designed to accommodate two additional units of the same size to be constructed when the need for this additional power becomes actual.

Colorado-Ute has stated publicly that the construction of the new facilities, including the Yampa Project, are not related in any manner to proposed oil shale or other energy development. The company has stated that the need for these additional facilities exists independently of oil shale development and can be demonstrated by previous growth patterns and current rates of growth.

The amount of energy sold by Colorado-Ute in 1974 totalled 1,407,387,144 (k-Wh). The peak demand, which occurred in December, 1974, was approximately 259 megawatts, a figure substantially below the 360-megawatt capacity of the Association in that year. The three companies in the region that purchased energy from Colorado-Ute were White River, Holy Cross and Grand Valley. White River purchased 62 million (k-Wh) of electricity in 1974 and had a peak demand of 8 megawatts. Holy Cross

bought 163 million (k-Wh) in 1974 and its peak demand was 47 megawatts. Grand Valley bought 52 million (k-Wh) of electricity in 1974 and its peak demand was 12 megawatts.

The lack of apparent correlation between the total amount of energy and the peak demand figures is due to the different types of energy uses existing in the different areas. The White River area uses a large percentage of its power in connection with oil and gas wells which demands remain fairly constant. The Grand Valley area is typified by seasonal irrigation pumping and its peak demand is much greater than demands at other times.

#### b. Natural Gas

The production, transmission, and sale of natural gas in the area is dominated by the Public Service Company through its wholly-owned subsidiary Western Slope Gas Company. Western Slope is basically a transmission company which buys gas at the well-head from independent producers and sells it to the Public Service Company, Greeley Gas Company and the Town of Rangely. Greeley Gas serves Meeker and the Town of Rangely serves the Rangely area. Public Service serves Rifle, Grand Junction and the Grand Valley area.

Total sales of natural gas by Western Slope in 1974 in the three county region was approximately 77 million MCF (MCF = thousand cubic feet) or 11 billion cubic feet, with a 14.65 pound base. Of this amount, approximately 98 percent of the gas came from the production of local suppliers. The remaining two percent, or 3100 MCF, was acquired by Western Slope through a contract with the Northwest Pipeline Company. Western Slope sells all of its natural gas to its customers at the same price rate. All gas sold is compressed and transmitted through underground pipelines.

Western Slope is not presently gearing-up for oil shale production. However, the company is facing no problem supplying its present customer's needs for natural gas, due, in part, to the absence of a "gas attachment" policy. A "gas attachment" policy is an exclusive contract granted to supply specific amounts of gas in the future. Such a policy also prevents flexibility in acquiring different quantities of gas at different times. However, Western Slope is encountering some difficulty in acquiring new natural gas reserves for future sale. The situation is attributed by the company to a keen competition in the area for production and also to present pricing confusion at the federal level. According to the company, demand for natural gas at the retail level is increasing in all parts of the state. The company has not taken on any new large industrial customers in several years and has not granted any large increases in interruptible supply for a similar period. No large customers have been added because constructing costly facilities to provide new supplies would be utilized only on an irregular basis.

The other company which supplies natural gas in large quantities in



the region is the Rocky Mountain Natural Gas Company, headquartered in Denver. Rocky Mountain provides gas to Glenwood Springs and to a very small area in Mesa County. Total sales in this area in 1974, nearly all of which were in Glenwood Springs, were 852,000 MCF. Of this amount, approximately 25 percent of the gas came from Rocky Mountain's own production in Moffat, Rio Blanco, Pitkin, Garfield, Mesa and San Miguel counties. The remaining 75 percent was purchased at the well-head by Rocky Mountain from independent producers in the area.

While Rocky Mountain presently has the capacity to serve the needs of its established customers, it has declared a moratorium on new customer connections that has been partially lifted, but remains generally in effect. The company estimates that it presently has a 17-year reserve life (calculated by dividing total reserves by present annual customer demand) and is attempting to enlarge its acquisition and storage capabilities in order to provide additional service to new customers in the future. Rocky Mountain also states that it is presently making no provision in its planning for oil shale development.

#### E. Police, Fire and Ambulance Services

##### 1. Police and Sheriff Departments

Garfield, Mesa and Rio Blanco county each has a Sheriff's Department responsible for patrolling all areas outside incorporated towns. Considering the size of the area to be patrolled, the manpower of each department is rather limited. Increased development outside the incorporated areas would necessitate expansion of sheriff's departments in each county.

Municipal police departments are also operating at or over capacity, according to local officials. Although manpower has been reinforced substantially in recent years (Grand Junction has added ten men since 1974), rapid population growth has made it difficult for police departments to keep up with the growing demand for police services. Manpower and vehicle counts for both sheriff and police departments in the three counties are given in Table VIII-15.

##### 2. Fire and Ambulance Services

Fire Departments in the region are volunteer with the exception of Grand Junction, which has a professional department (Table VIII-16). Service is generally better in towns and cities than in rural areas. A number of towns maintain separate equipment for municipal and rural use. Fire protection districts also have been established in some places to broaden service areas and improve financing methods.

Ambulance service is provided primarily by local fire departments on a volunteer basis. In addition, some local hospitals also provide ambulance service.

Table VIII-15

COUNTY SHERIFFS AND MUNICIPAL POLICE DEPARTMENTS IN  
GARFIELD, MESA AND RIO BLANCO COUNTIES

Area Served	Manpower	No. of Vehicles
Garfield County	6	4
Glenwood Springs	10	2
Grand Valley	1	1
Rifle	6	2
Mesa County	18	8
Grand Junction	67	12
Rio Blanco County	5	5
Meeker	3	2
Rangely	4	2

Source: This information was obtained from field interviews with city managers, police chiefs and county planners in the counties and towns of the region.

Table VIII-16

FIRE PROTECTION IN SELECTED CITIES OF THE REGION

District or Department	Manpower	No. of Vehicles
Glenwood Springs Fire Department	40 volunteers	5 pumpers
Grand Valley & Rural Fire District	21 volunteers	3 pumpers
Rifle Fire Department	25 volunteers	3 pumpers
Grand Junction Fire Department	53 volunteers	13 pumpers
Meeker Fire Department	30 volunteers	5 pumpers
Rangely Fire Department	N/A	4 pumpers

Source: This information was obtained from field interviews with local officials, including city managers, police chiefs, and county planners in the counties and towns of the region.

## F. Water, Sewer and Solid Waste Disposal

### 1. Water Supplies

Each of the communities in the region has its own water system. The towns acquire their water either from wells, springs, major streams or the Colorado River. Water supply is generally administered by towns, water and sanitation districts or private corporations. Operating costs and capital bond repayment for most town supplies are obtained through charges to the users and various tap or connection fees.

Individual homes and farms outside the town generally use well water. The drilling of wells for water in Colorado is subject to approval by the State Engineer's Office. Under state legislation, wells are not permitted to be drilled without proof that surrounding water will not be adversely affected.

No precise figures are available on per capita water consumption in the region. National municipal per capita averages of 125-150 gallons per day are low for this semi-arid region. About 200 to 300 gallons per day per capita is probably a more realistic figure depending on the extent of irrigation required. Table VIII-17 describes the water supply systems of selected towns in the region. Many of the water systems currently in use are operating over design capacity.

Major expansions of water systems are either anticipated or under way in several of the major towns. Systems are currently being improved in Rangely and in Meeker to accommodate anticipated population growth. Glenwood Springs is planning a change to a more sophisticated filtering system. Funding for these improvements in water and sewer systems has come from State and Federal sources including the Environmental Protection Agency and the Economic Development Administration.

### 2. Sewer Systems

Sewer systems within the region are described in Table VIII-18. As with water systems in several of the municipalities, many sewer systems are currently operating over capacity. All systems have been upgraded to meet the minimum requirements necessary to obtain discharge permits from the E. P. A. In addition, E. P. A. grants and approvals for facility expansion are in various stages of progress in Grand Junction, Glenwood Springs, Rifle, Meeker and Rangely. In the latter two towns sewer systems are being expanded to handle potential population increases of 5,000 and 10,000, respectively. Furthermore, the Meeker system is designed to enable modular expansion as may be required by future demands.

## G. Solid Waste Disposal

Landfill and dump facilities are described in Table VIII-19. No information was available on capacities of the landfills currently in use. It is safe to assume, however, that any significant population increase

Table VIII-17  
MUNICIPAL WATER SYSTEMS IN SELECTED CITIES  
IN THE REGION

Town	Source	Design Capacity	Storage Capacity	Number of Taps
Grand Valley	23 Springs	0.2 MG/D	125,000 Gal.	130
Rifle	Colo. River Beaver Creek	4.0 MG/D	750,000 Gal. 0.6 MG	910
Glenwood Springs	No Name Creek Grizzly Creek	NA 12.5 MG/D	NA 1.54 MG	35 1,430
Grand Junction	Kannah Creek	24.0 MG/D	30 MG	8,885
Rangely	White River	.75 MG/D	575,000 Gal.	600
Meeker	White River	.75 MG/D	NA	NA

Source: Adopted from Task Force '76, 1973, Water, pages 1-20 and from field interviews with town officials.

Table VIII-18  
MUNICIPAL SEWER FACILITIES IN SELECTED CITIES  
IN THE REGION

Town Served	Type	Pop. Equiv. Design Capacity	Pop. Served
Glenwood Springs	Trickling Filter	7,400	5,000
Grand Valley	Extended Aerated	300	270
Rifle	Surface Aerated Lagoons	3,250	2,150
Grand Junction (city plant)	Trickling Filter	—	2,100
Meeker	Extended Aerated	1,600	2,000
Rangely	Aerated Lagoon and Stabilization Pond	3,000	2,400

Source: Task Force '76, 1973, Sewer, pages 1, 3, 5.

Table VIII-19  
SOLID WASTE DISPOSAL FACILITIES IN SELECTED CITIES  
IN THE REGION

Town Served	Type	Pop. Served	Compliance With State Health Department	Designated as Facility by State Health
Glenwood Springs	Landfill	5,000	No	Yes
Grand Valley	Small Dump	215	No	—
Rifle	Small Dump	3,000	No	Yes
Garfield County	Landfill	16,500	Yes	Yes
Grand Junction	Landfill	8,800	Yes	Yes
Mesa County	Landfill	14,000	No	Yes
Meeker	Landfill	1,600	Yes	Yes
Rangely	Landfill	2,000	Yes	Yes

Source: Task Force '76, 1973, Solid Waste, pages 1, 3, 4.

would require expanded landfill facilities and purchase of necessary compacting equipment.

## H. Health Services

### 1. Medical Facilities

The three county region has nine general hospitals with a total capacity of 438 beds. In addition, 13 facilities are available for resident care, intermediate care and nursery care with a total bed capacity of 1,219. There are three mental health care facilities and a poison control center.

Hospitals in the area are listed in Table VIII-20. As is shown in the Table, hospital facilities are fairly evenly distributed in terms of capacity among the major towns in the region, with the exception of Grand Junction, which has a far greater capacity. Eleven out of 17 of the nursing homes and other health facilities in the region are concentrated in Grand Junction. Nursing homes and other health facilities are shown in Table VIII-21.

### 2. Medical Manpower

The number of doctors, nurses and other health care personnel in each county and the ratio of population to health professional is shown in Table VIII-22. Several regional, county and city health planning councils also are located in the region as shown on Table VIII-23.

## I. Human Services

### 1. Public Welfare

A 1973 study done by Task Force '76 under the aegis of the Oil Shale Regional Planning Commission, provides a compilation of information on public welfare services in the region. The information on public welfare is the most recent information to be gathered on the subject for the three county area. Although the data is somewhat dated, it provides an overview of the types of public welfare, number of cases and funding sources for such a program. Table VIII-24 provides information on ten welfare programs administered in 1972.

There are three programs in addition to those listed in Table VIII-24. These are: Medicaid - Title XIX, funded 56.24 percent federally and 43.76 percent from the State; Child Day Care, funded 75 percent federally, five percent from the State and 20 percent from the county; and Child Welfare, funded 80 percent from the State and 20 percent from the county. Child Welfare is a service for children found dependent through abuse or neglect by the court. Child Day Care primarily serves working parents with service purposed from private groups.

Table VIII-20  
HOSPITALS IN THE REGION

Hospital	Ownership or Control	Type	Bed Capacity
The Lower Valley Hospital	Non-profit	General Hospital	20
100 West Tabor Avenue		NCF	16
Fruita		IHCF	9
Grand Junction Osteopathic	Non-profit	General Hospital	44
1065 Walnut			
Grand Junction			
Mesa Memorial Hospital	Non-profit	General Hospital	42
10th and Grand Avenue			
Grand Junction			
St. Mary's Hospital	Church	General Hospital	220
7th and Patterson Road			
Grand Junction			
Pioneers Hospital	County	General Hospital	20
345 Cleveland Street			
Meeker			
Rangely District Hospital	District	General Hospital	28
510 So. White Avenue			
Rangely			
Clagett Memorial Hospital	Non-profit	General Hospital	20
707 East Fifth Street		NCF	12
Rifle			
Valley View Hospital	Church	General Hospital	36
1906 Blake Avenue			
Glenwood Springs			
Plateau Valley	Church	General Hospital	8
Congregational Hospital		NCF	11
P.O. Box 57			
Collbran			

Source: Task Force '76, 1973, Health.



Table VIII-21  
OTHER HEALTH FACILITIES IN THE REGION

Facility	Ownership or Control	Type	Licensed Bed Capacity
Flynn's Foster Home 1127 Main Street Grand Junction	Proprietary	RDF	7
Franklin's Manor 2897 Orchard Avenue Grand Junction	Proprietary	IHCF	24
Franklin's Nursing Home 514-28 "3/4" Road Grand Junction	Proprietary	NCF IHCF	21 7
Medicenter/Grand Junction 1100 Patterson Road Grand Junction	Proprietary	Conv. Ctr.	62
Mesa Manor Nursing 2901 North 12th Street Grand Junction	Proprietary	NCF IHCF	90 24
Sharon Hill Nursing Home 2815 "F" Road Grand Junction	Proprietary	IHCF	16
State Home & Training School 2812 "D" Road Grand Junction	State	NCF IHCF	297 228
Teller Arms Nursing Home, Inc. 2425 Teller Avenue Grand Junction	Proprietary	NCF	116
Eventide of Palisade Palisade Nursing Home 151 East Third Street Palisade	Proprietary	NCF IHCF RCF	94 2 6
Wahlbridge Memorial Convalescent Wing 345 Cleveland Meeker	County	NCF	25
E. Dence Moore Memorial Home 707 East Fifth Rifle	Community	NCF	58
Glen Valley Nursing Home 2305 Blake Avenue Glenwood Springs	Community	NCF	43
Mt. View Nursing Home 2014 Blake Avenue Glenwood Springs	Community	NCF	34
Poison Control Center St. Mary's Hospital Grand Junction			

MENTAL HEALTH CARE FACILITIES

Mesa County Mental Hygiene Clinic 515 Patterson Grand Junction Admission from county to facility 1968-1969			691
St. Mary's Hospital 7th and Patterson Grand Junction Admission from county to facility 1968-1969			333
Sopris Mental Health Clinic, Inc. 1012 Cooper P.O. Box 955 Glenwood Springs Admissions from county to facility 1968-1969			17

Source: Task Force '76, 1973, Health.

Table VIII-22  
HEALTH CARE MANPOWER IN GARFIELD,  
MESA AND RIO BLANCO COUNTIES  
(1971)

	Mesa		Garfield		Rio Blanco	
	No.	per Persons	No.	per Persons	No.	per Persons
Physicians	106	517	19	788	4	1,221
Practicing Registered Nurses	290	189	67	224	32	153
Dentists	36	1,523	10	1,497	5	977
Registered Pharmacists	61	899	21	713	3	1,628
Practicing L.P.N.'s	175	313	18	832	11	444
Dental Hygienists	7	7,835	3	4,992	2	2,442
Optometrists	2	27,643	2	7,624	0	—
Dietitians & Nutritionists	8	6,855	0	—	0	—
Psychologists	3	18,281	0	—	0	—
Physical Therapists	8	6,855	0	—	0	—
Chiropractors	8	6,855	3	4,992	0	—
Chiropodists	2	27,643	0	—	0	—
TOTAL	706		143		57	

Source: Task Force '76, 1973, Health.

Table VIII-23  
HEALTH PLANNING IN GARFIELD,  
MESA AND RIO BLANCO COUNTIES

---

Regional, County and City Health Planning Councils

---

Mesa County

West Central Colorado Health Planning Association  
Route 1, Box 107  
Rifle

Jurisdiction: Region XI

Mesa County Health Council  
200 North Sixth  
Grand Junction

Jurisdiction: Mesa County

Garfield County

West Central Colorado Health Planning Association  
Route 1, Box 107  
Rifle

Jurisdiction: Region XI

Garfield County Health Council  
Route 1, Box 107  
Rifle

Jurisdiction: Garfield County

Rio Blanco County

The Northwest Colorado Comprehensive Health Planning Council  
Craig Medical Clinic  
580 Pershing  
Craig

Jurisdiction: Region XII

---

Source: Task Force '76, 1973, Health.

Table VIII-24

PUBLIC WELFARE PROGRAMS IN GARFIELD, MESA AND RIO BLANCO COUNTIES  
(August, 1972)

County	Old Age Pension No. Cases	Average Dollars Per Case	1972 Funding Sources	Aid to the Blind No. Cases	Average Dollars Per Case	1972 Funding Sources	Aid to the Needy Disabled No. Cases	Average Dollars Per Case	1972 Funding Sources			
Garfield	295	\$80.41	Federal 56.24% State 43.76%	0	0	Federal	34	\$79.11	Federal			
Mesa	1,394	75.84		24	\$37.37	56.2%	816	58.72	56.24%			
Rio Blanco	75	78.96		0	0	State	4	71.00	State			
3 County Region	1,764	\$78.40		24	\$37.37	23.7% County	854	\$69.61	23.76% County			
County	Aid to(a) Families with Dependent Children No. Recipients	No. Children	Average Dollars Per Case	1972 Funding Sources	Aid to Dependent- Unemployed Parent No. Recipients	No. Children	Average Dollars Per Case	1972 Funding Sources	Work Incentive Program No. Recipients	No. Children	Average Dollars Per Case	1972 Funding Sources
Garfield	90	225	\$158.97	Federal	3	8	\$261.00	Federal	4	9	\$172.75	Federal
Mesa	721	1,659	155.79	56.24%	22	47	229.18	56.24%	76	180	176.89	56.24%
Rio Blanco	31	81	194.00	State	0	0	0	State	1	1	152.00	State
3 County Region	842	1,965	\$169.61	23.76% County	25	55	\$245.09	23.76% County	81	190	\$167.21	23.76% County
County	General Assistance No. Recipients	Average Dollars Per Case	Food Stamps No. Non-public Assistance Households	1972 Funding Sources	Food Stamps No. Public Assistance Households	1972 Funding Sources	Supplemental Foods(b) No. Persons			1972 Funding Sources		
Garfield	0	0	66	Federal	426	Federal	0			Federal		
Mesa	14	\$35.64	425	50%	3,067	50%	470			50%		
Rio Blanco	5	74.80	20	State	116	State	0			State		
3 County Region	19	\$55.22	511	30% County	3,609	30% County	470			30% County		

Notes: (a) The aid to families with dependent children, aid to dependent unemployed parents and work incentive programs were all administered under the aid to families with dependent children program; therefore, the funding sources are the same in each instance.

(b) Includes children under six and pregnant mothers.

Source: Adapted from Task Force '76, 1973, Health.

---

CHAPTER IX

PUBLIC OPINION

---



## CHAPTER IX PUBLIC OPINION

### A. Introduction and Summary

Opinions of residents in the region and in the State of Colorado are discussed in this chapter. Six surveys are discussed and results from these surveys are presented.

Of the survey work that has been carried out on the Western Slope and in the State of Colorado, one study was conducted statewide, one was conducted in the three county region, one in Garfield County, and one each in the towns of Grand Valley, Meeker and Rangely. The studies were supported by a number of agencies including local governments, the state and industry.

A study conducted by Bickert, Browne and Coddington in 1973 showed that people chose to live in the region because of the climate, the friendly neighbors, the physical environment and the small communities. Results of the same study indicated that the economy and education were matters of priority concern in the region. Twenty-five percent of the respondents rated the economy as first priority and twenty-three percent rated education as a top priority.

Respondents to the Bickert, Browne and Coddington study also felt that the major problems of living in the area were the high cost of living, low wages, a shortage of jobs and a shortage of amenities such as shopping facilities. Housing was also felt to be in short supply particularly in Rio Blanco County. Respondents in Garfield and Mesa Counties indicated a desire for more low and middle income housing, and Rio Blanco County residents expressed a need for almost any type of additional housing.

Residents of the region favored encouraging business to move into the area. However, Garfield County residents were not as willing to encourage industry to move into the area as were residents of Mesa and Rio Blanco Counties. The Bickert, Browne and Coddington report also showed that respondents were not entirely favorable to increased tourism in the area.

Results of the Bickert, Browne and Coddington survey show that between 66 percent and 89 percent of people living in the four communities of Glenwood Springs, Grand Junction, Meeker and Rifle want some growth in their respective cities. Eighty-nine percent of Meeker residents desired growth beyond the current size of the town. However, a survey of Meeker residents taken by the town of Meeker showed a tendency of residents to disagree with settlement of a majority of growth related to resource development in Meeker. In contrast, a special survey of Grand Valley indicated residents were two to one in favor of their city being the focus of growth in the area.

Regarding regulation of oil shale related growth, 27 percent of area residents favored growth regulation, 13 percent opposed it and 60



percent did not know how they felt. However, 76 percent of public officials responding to the Bickert, Browne and Coddington survey were in favor of growth regulation. A survey taken by Cambridge Survey Research indicated that, from a sample of Colorado voters, 44 percent of respondents favored oil shale development and 36 percent were opposed to it. Finally, the Cambridge Survey Research study indicated that 77 percent of the sampled voters were in favor of an experimental oil shale plant, and 19 percent were opposed to such a plant.

## B. Nature of the Surveys

The studies described in this chapter were conducted between 1972 and 1975. Each of the studies relates in some way to oil shale development and population growth in Colorado. The studies differ significantly in terms of scope and procedure, in that some were large scale efforts carried out by professional survey organizations, while others were small scale, informal studies carried out at the local level. The reader is therefore advised to interpret these data with caution. The studies also represent a broad diversity of sponsorship, in that three were commissioned by local government, one by industry and one by the Governor's Regional Development and Land Use Planning, Steering and Monitoring Committee, whose membership was drawn from industry, government and environmental groups.

The surveys considered are:

(1) Attitudes and Opinions of Influentials in Garfield County, June, 1972, Norman Wengert, commissioned by Colony Development Operation;

(2) Attitudes and Opinions Related to the Development of an Oil Shale Industry, July, 1973, Bickert, Browne and Coddington, commissioned by the Governor's Monitoring Committee;

(3) Area Opinion Survey for the Town of Meeker, June, 1974, participating individuals and agencies: Town of Meeker, Pioneers Hospital, Meeker School District RE-1, County Extension Service and County Planning Commission;

(4) Area Opinion Survey for the Town of Rangely, September, 1974, participating individuals and agencies: Town of Rangely, Rangely College, Rangely Hospital District, County Planning Commission and Rangely School District RE-4;

(5) Grand Valley Questionnaire, June 17, 1975, commissioned by the Garfield County Planning Department;

(6) An Analysis of Attitudes in the State of Colorado, September, 1974, Cambridge Survey Research, commissioned by The Oil Shale Corporation.

It should be noted that the surveys presented in this section are not entirely comparable. The Meeker and Rangely surveys, for example, were mailed to all box holders in the vicinity of the respective towns. The

Meeker survey received 325 responses, and the Rangely survey received 255 responses. It is possible that neither of these surveys is representative of the population of the Meeker and Rangely areas. The Rangely survey, for example, shows that a large number of Rangely College personnel responded proportionately to individuals in other occupations.

The Garfield County survey of Grand Valley was handed out to approximately 350 adult residents. A copy of the questionnaire was given to each adult in each household. There were 162 respondents (an estimated 57 percent return) to the Grand Valley survey. There are an estimated 165 households in the area.

Each of these three surveys is useful for understanding opinions of the people in the region. However, questions about their scientific representation should lend caution to interpretations of the responses. In the case of the Meeker, Rangely and Grand Valley surveys, unrepresentative findings could have resulted if the opinions of respondents did not actually represent majority opinions of area residents.

The other three studies were done with samples of varying sizes and types. The Wengert study interviewed a sample of selected Garfield County influentials based on newspaper research and followed up their information by interviews in the second group based upon suggestions from the first group of respondents. The Wengert study had a final response of 230 completed interviews out of 254 attempted interviews with influentials in Garfield County in 1972. Any unrepresentativeness in Wengert's findings would be due to the process by which influentials were defined and selected.

The Bickert, Browne and Coddington survey sampled 200 residents from each of the three counties and 110 public officials from four counties including Moffat County as well as Mesa, Garfield and Rio Blanco Counties. The final sample of usable interviews consisted of 592 residents and 110 public officials.

The Cambridge survey was based on telephone interviews with a representative sample of 495 Colorado voters. Each of the surveys cited above had different groups of respondents and asked different types of questions. Differences in respondents and questions asked them should be kept in mind when considering the results of each of the surveys.

## C. Local Views About the Quality of Life

### 1. The Physical Environment and Rural Quality of Life

A great many residents of the three county region moved there because of the environment or reported that the environment was the region's major asset. Like most residents of rural communities throughout the region, they most often mentioned the physical environment and the small town atmosphere when asked about the advantages of living in the area.

The Bickert, Browne and Coddington study showed that residents in Mesa County felt that the climate was an outstanding feature of life in the region (see Table IX-1). Individuals living in Rio Blanco County were less apt to mention the climate. Rio Blanco County inhabitants praised the friendly people and the small size of the community. The human elements were not as important to residents of Garfield County as were the mountains, scenery and recreational resources. The casual atmosphere and lack of congestion also were noted. Few individuals credited economic factors with providing the main personal rewards of everyday life.

According to the Bickert, Browne and Coddington survey, public officials were more likely than other residents to cite human factors such as friendliness and small community size as being particularly rewarding. The healthy climate and positive environmental factors were often praised by public officials, with the exception of those residing in Rio Blanco County. Garfield County officials enjoyed the mountains and the scenery, features which had little bearing on the everyday lives of the public officials from Rio Blanco County. The relaxed casual life-style appealed to many individuals as well as the sense of independence and freedom which they felt was an important feature of life in the area.

While local residents considered the quality of the physical environment and the rural character of life to be the two major assets of the region, they also had some complaints about certain of its features. For example, Rio Blanco County residents felt that local shopping facilities were inadequate. The high cost of living was an issue in each of the counties. However, Rio Blanco County residents felt that the shortage of shopping facilities, entertainment, restaurants and recreational facilities were more problematic than did residents of the other two counties. Residents of Mesa and Garfield Counties felt that low wages and a shortage of jobs were also important problems, in addition to the cost of living.

The priority issues expressed by residents in the region and in their communities are indicated in Tables IX-2 and 3. Respondents were given a list of eight community priorities and asked which one they thought to be important. The economy and education were most widely regarded as top priority issues by residents of the region as nearly 50 percent of the respondents ranked one or the other of these as top priorities. In Grand Junction the economy was viewed as more important than education, while in Glenwood Springs and Rifle education significantly overshadowed economic concerns. In Meeker the two issues were ranked nearly equally. Table IX-3 shows the hierarchy of community priorities for Grand Junction, Glenwood Springs, Rifle and Meeker.

A similar response was evident in Wengert's study of influentials in Garfield County. This study showed that influentials considered growth and the economy to be the most important problems facing the three county region (Table IX-4). Zoning and water problems, closely related to growth and the economy, followed as the next most important. It might be noted that in both studies the economy was consistently considered a priority.

Table IX-1  
POSITIVE AND NEGATIVE ASPECTS OF LIFE IN  
THE REGION AS PERCEIVED BY AREA RESIDENTS

Item	Total Sample	Percent of Residents		
		Garfield	Mesa	Rio Blanco
Positive Aspects (Top Ten)				
1. Good Climate	43	22	52	9
2. Like the people; friendly neighbors	35	32	35	42
3. Like mountains; countryside	32	46	29	20
4. Like small size of community	30	19	32	32
5. Recreation resources	22	27	22	10
6. Lack of congestion	22	18	23	20
7. Accessibility of outdoor recreation	17	17	18	8
8. Whole community; good for children	11	9	12	11
9. Lack of air pollution	9	8	9	11
10. Lack of noise	6	6	6	7
Negative Aspects (Top Seven)				
1. High cost of living	28	29	30	13
2. Low wages	21	4	28	6
3. Shortage of jobs	17	8	21	7
4. Shortage of shopping facilities	17	21	14	36
5. Isolation of area	10	5	11	13
6. Lack of entertainment and recreational facilities	8	8	7	17
7. Dislike the winters	4	9	3	7

Source: Bickert, 1973, page 22.

Table IX-2  
HIERACHY OF COMMUNITY PRIORITIES AS  
RANKED BY RESIDENTS OF THE REGION

Priority Areas	Percent of Respondent Ranking Priority as MOST Important
The local economy	25%
Education	23
Transportation and roads	13
Community services	10
Health services	8
Local government	7
Planning and zoning	6
Recreation and leisure	5
Do not know, No answer	4

Source: Bickert, 1973, page 28.

Table IX-3  
THE TOP FOUR COMMUNITY PRIORITIES  
AS RANKED BY THE RESIDENTS OF GRAND JUNCTION,  
GLENWOOD SPRINGS, RIFLE AND MEEKER

Priorities	Grand Junction	Percent of Residents			Meeker
		Glenwood Springs	Rifle		
Economy	28%	12%	10%		25%
Education	26	32	31		19
Transportation and Roads	12				
Community Services	9		15		14
Health Services		16			
Local Government			10		
Planning and Zoning		10			11
Recreation and Leisure					

Source: Bickert, 1973, pages 26-27.

Table IX-4  
RANKING OF MOST IMPORTANT PROBLEMS OF THE AREA  
BY GARFIELD COUNTY INFLUENTIALS

QUESTION:

What do you think are the most  
important problems now facing this area?

Problem Mentioned	Number of Responses
Growth	93
Economy	79
Zoning	61
Water	53

Source: Wengert, 1972, page 85.

Table IX-5  
RANGELY RESIDENT'S OPINIONS ON AREA PROBLEMS

STATEMENT: Check two of the following problems you feel should receive the most attention from elected officials.

Number of Responses	Problem Mentioned
159	Attract new business and industry
106	Make government more responsive to people
55	Coordinate town and county government services
39	Preserve prime river valleys from real estate development
37	Preserve prime agricultural land
33	Establish limits for town expansion
33	Improve educational facilities
29	Control crime
11	Improve agricultural marketing system

Source: Rangely Times, October 2, 1974, pages 2-3.



The concern that Garfield County influentials expressed about growth may be in part a reflection of the recent rapid growth that the county has experienced.

A recent survey taken in Rangely (Table IX-5) shows that residents feel that elected officials should pay most attention to attracting new business and industry, and making government more responsive to the citizens.

## 2. The Socio-Economic Environment and the Quality of Life

### a. Employment

Employment, as mentioned earlier, was considered to be a major problem for respondents to the Bickert, Browne and Coddington survey. Roughly two-thirds of the residents indicated that it was difficult to find employment in the region whereas the public officials did not share this point of view (Table IX-6). It appears that Mesa County residents have experienced greater difficulty finding employment than Rio Blanco and Garfield County residents. Mesa County respondents were also most dissatisfied with the pay scale for employment.

Table IX-7 shows that 38 percent of the respondents to the Bickert, Browne and Coddington survey felt that the head of the household possessed non-utilized occupational skills. Once again, more respondents (39 percent) from Mesa County felt they had non-utilized skills than did residents of the other two counties. One out of every five residents reported that a member of their family had been forced to leave the area in order to find suitable employment. That percentage was even higher (28 percent) among residents of Rio Blanco County. Meeker and Rifle had been particularly hard hit in that regard. In most instances, the family member involved was under the age of 35 (or in Rio Blanco County, under the age of 25) was male, and fell into one of the following occupational categories: operative, professional worker, craftsman or automobile mechanic. Where employment opportunities might have been available, two-thirds of the individuals in the region felt the pay scale was inadequate.<sup>1</sup>

### b. Schools

In general, local educators were considered well qualified. Respondents to the Bickert, Browne and Coddington survey also felt that there was a sufficient number of teachers. Respondents, however, were more critical of the schools when it came to preparing students for a job, college, and for the world (Table IX-8).

Residents of Meeker rated the quality of educational programs and availability of school facilities to the public as good. Respondents to the Meeker questionnaire were not entirely pleased with the responsiveness of public school personnel or the school board (Table IX-9).



Table IX-6  
REGIONAL RESIDENT'S ATTITUDES TOWARD  
THE LOCAL EMPLOYMENT SITUATION

Statement	Percent of Residents				Percent of Public Officials				
	Total	Rio			Total	Rio			
	Sample	Garfield	Mesa	Blanco	Sample	Garfield	Mesa	Blanco	Moffat
There's little difficulty finding employment around here.									
Agree	21%	23%	19%	33%	45%	41%	25%	63%	75%
Uncertain	11	12	11	6	6	8	8	5	—
Disagree	68	64	69	61	49	51	67	32	25
The pay scale for employment in this area is generally good.									
Agree	18	34	12	40	40	54	14	53	50
Uncertain	9	12	8	8	4	5	3	—	6
Disagree	73	54	80	52	56	41	83	47	44

Source: Bickert, 1973, page 35.

Table IX-7  
EMPLOYMENT CHARACTERISTICS OF RESIDENTS OF  
GARFIELD, MESA AND RIO BLANCO COUNTIES

	Total Sample	Percent of Residents		Rio Blanco
		Garfield	Mesa	
Head of household employed	78%	74%	79%	75%
Head of household retired	11	12	11	6
Head of household unemployed	2	6	1	9
No answer	8	7	9	10
Spouse employed	39	25	42	46
Head of household possesses non-utilized occupational skills	38	32	39	34
Spouse possesses non-utilized occupational skills	30	36	30	22

Source: Bickert, 1973, page 34.

Table IX-8

## REGIONAL RESIDENT'S ATTITUDES TOWARD QUALITY OF INSTRUCTION IN LOCAL SCHOOLS

Statement	Total Sample	Percent of Residents			Total Sample	Percent of Local Officials			Moffat
		Garfield	Mesa	Rio Blanco		Garfield	Mesa	Rio Blanco	
The local school system has a sufficient number of well-trained teachers									
Agree	53%	46%	53%	71%	72%	67%	72%	79%	75%
Uncertain	25	26	26	14	14	10	17	16	12
Disagree	21	24	21	14	15	23	11	5	13
Most of the teachers in the local schools are well-qualified									
Agree	57	52	58	68	80	69	86	84	88
Uncertain	26	28	26	16	13	13	11	16	12
Disagree	16	16	16	13	7	18	3	.	.
Rating of Job Done by Local School System									
In preparing children for college:									
Excellent	9	6	9	12	26	21	47	21	.
Pretty good	38	35	39	38	48	54	33	32	88
Only fair	25	27	24	23	18	18	14	37	6
Poor	12	14	11	19	7	8	6	11	6
In preparing children for a job:									
Excellent	6	4	6	8	5	.	6	5	5
Pretty good	26	26	25	31	35	49	28	26	25
Only fair	31	28	31	32	38	26	53	47	25
Poor	21	23	21	20	19	18	11	21	38
In preparing children to cope with the world they'll be growing into:									
Excellent	4	2	5	5	7	.	17	5	6
Pretty good	28	24	28	36	41	44	39	42	38
Only fair	26	29	25	3	36	33	33	42	44
Poor	22	23	22	19	11	18	8	11	.

Source: Bickert, 1973, page 39.

Table IX-9  
MEEKER RESIDENT'S OPINION ON LOCAL EDUCATION

STATEMENT: Please Rate the Following:	Excellent	Number of Responses		Poor
		Good	Fair	
Quality of educational programs:				
a. Elementary School	59	205	53	5
b. Junior High	66	191	53	6
c. High School	31	141	104	42
Availability of school facilities to community.	47	156	63	16
Responsiveness of public school personnel to the people's needs.	30	141	119	19
Responsiveness of school board to people's needs.	14	111	144	29

Source: Meeker Survey, September, 1974.

Table IX-10  
RANGELY RESIDENT'S OPINIONS ON LOCAL EDUCATION

STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		Poor	No Answer
			Fair			
Quality of educational programs:						
a. Elementary School	39	172	26	8	10	
b. Middle School	32	161	36	13	13	
c. High School	20	172	32	16	15	
d. College	22	162	37	17	17	
Availability of school facilities:						
a. To the community	66	126	35	11	15	
b. School Board	12	56	60	85	42	
c. College committee	10	86	76	29	54	
d. Public school personnel	31	108	72	12	32	
e. College personnel	5	60	81	60	49	

Source: Rangely Times, September 12, 1974, page 2.

Rangely residents rated the quality of educational programs and availability of school facilities as good. Residents thought public school personnel were good, but rated the school board fairly low (Table IX-10).

#### c. Housing

Housing was considered a problem throughout the area. The most often stated need was for low and middle income housing. Availability of housing was rated from fair to poor in the Meeker, Rangely and Grand Valley surveys (Table IX-11). Availability of vacant lots for building sites, however, was rated mostly fair in each of these three towns.

The housing problem was perceived to be particularly acute in Rio Blanco County, especially Meeker, and of a major consequence in Garfield County. Rio Blanco residents would welcome any type of housing, e.g., middle income, low income, rental, single family, condominiums and trailers. Garfield County respondents felt there was need for middle and low income housing, as well as for more rental units. Mesa County residents expressed the same desires as Garfield County residents, with greater stress on middle income housing.<sup>2</sup> Table IX-12 shows the opinions of area residents and public officials on the overall housing situation, low income housing, ethnic minorities and mobile home parks.

#### d. Health Services

The residents of the region generally felt that health services and hospital facilities were convenient. However, only 49 percent of Garfield County residents and 55 percent of Rio Blanco County residents felt that local professional services were equal to or better than services in most places in Western Colorado (Table IX-13).

#### e. Fire, Police and Sanitation

According to the Bickert, Browne and Coddington report police, fire and sanitation services were all rated highly by respondents. Respondents to the Rangely and Meeker surveys rated the fire protection and law enforcement services fairly high. Meeker residents are not entirely satisfied with the city police protection. Rangely residents are somewhat mixed in their feelings about the protection provided by the county sheriff's office (Table IX-14).

#### f. Roads

Most respondents agreed that highway and street maintenance needed to be improved in the region according to the Bickert, Browne and Coddington survey. However, Rangely and Meeker residents generally felt that street maintenance was good at the local, county and state levels (Table IX-15).

---

1. Information on the percentage of residents forced to leave the area is from Bickert, 1973, p. 36.

2. Bickert, 1973, p. 50.

Table IX-11

COMMUNITY RESIDENT'S PERCEPTIONS OF HOUSING AVAILABILITY  
IN GRAND VALLEY, MEEKER AND RANGELY

GRAND VALLEY

QUESTION: How would you rate the present availability of housing in Grand Valley?	Number of Responses			
	Good	Fair	Fair	Poor
Trailer space for rent	21		85	37
Houses for sale	7		46	103
Houses for rent	-		25	121
Apartments	1		5	135
Vacant lots for building sites	39		55	52

Source: Garfield County Planning Department, 1975.

MEEKER

QUESTION: Please rate the availa- bility of the following types of housing?	Number of Responses				
	Exc.	Good	Fair	Poor	No Answer
Trailer space	0	36	136	159	44
Apartments	1	29	165	136	47
Houses for sale	5	54	154	121	44
Houses for rent	0	15	131	189	42
Vacant lots for building sites	19	89	136	92	46

Source: Meeker Survey, September, 1974.

RANGELY

QUESTION: Please rate the availa- bility of the following types of housing?	Number of Responses				
	Exc.	Good	Fair	Poor	No Answer
Trailer space	7	45	85	104	14
Apartments	0	6	53	178	18
Houses for sale	0	15	96	139	15
Houses for rent	0	4	64	173	14
Vacant lots for building sites	0	55	94	80	18

Source: Rangely Times, September 12, 1974, page 2.

Table IX-12  
REGIONAL RESIDENT'S ATTITUDES TOWARD LOCAL HOUSING

Statement	Percent of Residents					Percent of Public Officials				
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco	Moffat	
The housing situation in this area is excellent.										
Agree	24%	10%	29%	7%	6%	8%	11%	—%	—%	
Uncertain	14	9	16	6	6	8	6	11	—	
Disagree	61	80	53	86	86	82	83	89	100	
This area has a responsibility to encourage housing for low-income families.										
Agree	65%	60%	67%	57%	63%	67%	58%	58%	69%	
Uncertain	11	10	11	16	19	10	25	21	25	
Disagree	24	30	22	27	18	23	17	21	6	
Ethnic minority families would be welcome in this area.										
Agree	69%	68%	71%	48%	74%	77%	81%	53%	75%	
Uncertain	13	15	12	24	12	10	8	10	25	
Disagree	18	17	17	27	14	13	11	37	—	
Planned mobile home parks can fit in well with other types of housing in our community.										
Agree	78%	75%	78%	89%	82%	74%	83%	90%	88%	
Uncertain	6	5	6	3	6	5	8	—	6	
Disagree	16	20	16	7	12	21	8	10	6	

Source: Bickert, 1973, page 51.

Table IX-13

## REGIONAL RESIDENT'S ATTITUDES TOWARD COMMUNITY HEALTH SERVICES

Statement	Percent of Residents				Percent of Public Officials				
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco	Moffat
There is a sufficient number of professional services (doctors, dentist, etc.) located fairly close.									
Agree	80%	77%	82%	67%	66%	59%	83%	74%	38%
Uncertain	2	4	2	2	—	—	—	—	—
Disagree	17	16	16	31	34	41	17	26	62
The professional services available around here are equal to, or better than, those found in most places in Western Colorado.									
Agree	75%	49%	84%	65%	68%	54%	89%	58%	89%
Uncertain	9	16	7	13	8	10	—	11	19
Disagree	15	33	9	32	23	30	11	26	12
Hospital facilities are quite convenient for my family's needs.									
Agree	87%	77%	29%	91%	88%	82%	92%	90%	94%
Uncertain	4	9	3	5	3	5	—	5	—
Disagree	9	13	8	4	9	13	8	5	6

Source: Bickert, 1973, page 46.



Table IX-14  
MEEKER AND RANGELY RESIDENT'S ATTITUDES ON  
LAW ENFORCEMENT AND FIRE PROTECTION

MEEKER					
STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		No Answer
			Fair	Poor	
Fire protection and equipment	131	181	30	1	40
Law enforcement and police protection					
City police	17	85	144	165	30
Sheriff	60	182	94	14	30

Source: Meeker Survey, September, 1974.

RANGELY					
STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		No Answer
			Fair	Poor	
Fire protection and equipment	29	98	35	6	89
Law enforcement and police protection					
Local	97	51	50	28	29
County	3	63	61	20	108

Source: Rangely Times, September 12, 1974, page 2.

Table IX-15

MEEKER AND RANGELY  
RESIDENT'S ATTITUDES ON TRANSPORTATION

MEEKER

STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		Poor	No Answer
			Fair			
Street or highway maintenance:						
Town	34	163	123	23	36	
County	30	192	97	21	38	
State	23	214	83	4	50	

Source: Meeker Survey, September, 1974.

RANGELY

STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		Poor	No Answer
			Fair			
Street or highway maintenance:						
Local	32	94	50	73	6	
County	57	86	57	44	11	
State	5	135	50	56	9	

Source: Rangely Times, September 12, 1974, page 2.

#### g. Commercial Facilities

Retail facilities, as noted earlier, were rated as more than adequate by Mesa County residents. Garfield County residents were divided on their opinion about the adequacy of local shopping facilities. Rio Blanco County residents were quite unhappy with the shopping situation, apparently because of the distance to adequate commercial facilities.<sup>1</sup>

#### h. Local Government

With regard to local government, the Bickert, Browne and Coddington report states:

"In every location the local city council was seen as the most responsive governmental body. Planning commissions, on the other hand, were rated the lowest in responsiveness, even by public officials. The local school boards fell somewhere between those two extremes, although they received lower ratings from parents with children in school than from other residents."<sup>2</sup>

The Meeker residents, however, rated government response to community needs fairly low in every case (Table IX-16). The Rangely residents were favorably disposed towards town and county officials, but somewhat displeased with town and county planning and zoning officials and somewhat divided about state officials.

#### i. Environmental Concerns

Respondents to the Bickert, Browne and Coddington survey were alarmed about present levels of water pollution. Air pollution was also seen as a problem, particularly by persons living in Mesa County. However, influentials in Garfield County, according to the Wengert study, did not feel that air and water pollution were particularly problematic. Only one-fourth of the individuals in Rio Blanco County perceived an existing air pollution problem. Public officials expressed similar views. Reactions to pollution in Garfield County were somewhat mixed.

Water pollution, however, was considered a problem for the region. Two-thirds of the people surveyed felt that water pollution was a concern. In Rio Blanco County, 53 percent of respondents expressed concern about water pollution. Public officials in each of the three counties considered water pollution a problem; for example, 58 percent of the public officials in Rio Blanco County and 78 percent in Mesa County disagreed with the statement, "We have no problems with water pollution around here" (Table IX-17).

At the time of the Bickert, Browne and Coddington surveys tighter land use regulations were supported in Garfield and Mesa Counties, but opposed in Rio Blanco County by both residents and public officials. However, there is some evidence that residents are becoming less opposed to

---

1. Bickert, 1973, pp. 43-44.

2. Bickert, 1973, p. 4.

Table IX-16  
MEEKER AND RANGELY  
RESIDENT'S OPINIONS ON LOCAL GOVERNMENT

MEEKER

STATEMENT: Please Rate the Following:	Excellent	Number of Responses			Poor	No Answer
		Good	Fair			
Government response to community needs:						
a. Town officials	6	124	159	34	56	
b. Town planning and zoning	5	99	172	45	59	
c. County officials	11	126	156	24	62	
d. County planning and zoning	10	113	145	46	66	
e. State officials	2	72	168	60	0	

Source: Meeker Survey, September, 1974.

RANGELY

STATEMENT: Please Rate the Following:	Excellent	Good	Number of Responses		Poor	No Answer
			Fair			
Government response to community needs:						
a. Town officials	40	89	51	37	38	
b. Town planning and zoning	1	58	96	73	27	
c. County officials	94	50	53	27	31	
d. County planning and zoning	2	44	105	51	53	
e. State officials	57	50	64	25	59	

Source: Rangely Times, September 12, 1974, page 2.

Table IX-17

## REGIONAL RESIDENT'S ATTITUDES TOWARD AIR AND WATER POLLUTION

Statement	Percent of Residents				Percent of Public Officials				
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco	Moffat
We have no problems with air pollution in this area.									
Agree	34%	49%	27%	72%	50%	54%	33%	68%	56%
Uncertain	7	9	7	3	7	5	—	16	19
Disagree	59	42	66	25	43	41	67	16	25
We have no problems with water pollution around here.									
Agree	21	25	18	41	24	33	11	37	13
Uncertain	12	11	13	5	6	—	11	5	6
Disagree	67	64	69	53	70	67	78	58	81

Source: Bickert, 1973, page 52.

land use regulations in Rio Blanco County. For example, the recent Meeker survey shows that residents strongly favor restricting residential development to unproductive agricultural areas and residents also favor local authority over land use regulations (Table IX-18).

#### j. Growth

As indicated in Table IX-19, community residents are generally in favor of some population growth rather than a decreasing or stable situation. Over 50 percent of respondents in Mesa and Rio Blanco Counties were against limitations on population growth (Table IX-20). Residents of Garfield County were almost equally divided on the question of population limits.

### D. Public Opinion Regarding Oil Shale Development

#### 1. General Attitudes

The data show that a strong consensus exists on the Western Slope favoring oil shale development. A survey of people in the state as a whole showed that 44 percent of respondents favor oil shale development. About 77 percent of voters polled in that survey would like to see oil shale developed on an experimental basis.

The Wengert study showed that 64 percent of the influentials in Garfield County in 1972 felt that oil shale development would benefit the area (Table IX-21). The Bickert, Browne and Coddington study indicated that 80 percent of Mesa County residents and 66 percent of Rio Blanco County residents agreed that additional industry should be encouraged to move into the area. However, Garfield County residents were divided on the issue with 43 percent in favor and 39 percent opposed. More than 75 percent of the public officials in each county supported industrial development according to Table IX-22. Similarly, over half of the residents in Garfield and two-thirds of the residents in Mesa and Rio Blanco Counties felt that oil shale development would help the region (Table IX-23).

A state-wide survey was carried out by Cambridge Associates in September, 1974. Table IX-24 shows that Colorado voters were 44 percent in favor and 36 percent opposed to oil shale, although strong opponents outnumbered strong supporters.

The Cambridge results showed that opposition was greatest among political independents, voters under forty years of age, middle income voters, new residents, women and residents of the area around Denver. The Cambridge findings indicated also that Colorado's voters would like to see oil shale developed on an experimental basis to determine its benefits and what damage it might cause. Seventy-seven percent of all respondents were in favor of this proposal (Table IX-25).

### E. Knowledge of Oil Shale Development

It may be useful to briefly consider the number of respondents who are knowledgeable to some extent about oil shale development and the effects of such knowledge on their opinions about the industry. Wengert found that 72 percent of respondents in Garfield County knew of the Colony Development Operation in 1972. However, respondents also felt that leaders and influential persons do not know much about oil shale development and even less

Table IX-18  
MEEKER RESIDENT'S ATTITUDES ON LAND USE CONTROL

Questions:	Yes	Number of Responses	
		No	No Answer
Do you feel residential development should be limited to unproductive agriculture areas?	230	110	37
If the results of a planning effort show that land use control is required, would you favor strong local authority?	270	70	40

Source: Meeker Survey, September, 1974.

Table IX-19  
COMMUNITY RESIDENT'S ATTITUDES ON  
MAXIMUM DESIRABLE POPULATION GROWTH  
FOR THEIR COMMUNITIES

Statement	Glenwood Springs	Percent of Residents		
		Grand Junction	Meeker	Rifle
Maximum greater than present population	65%	66%	89%	69%
Maximum same as present population	25	17	7	20
Maximum less than present population	1	4	1	0
Maximum desirable population				
(median)	7,763	42,030	3,502	4,406
(mode)	Between 5,000 and 10,000	Between 25,000 and 50,000	Between 2,500 and 5,000	Between 2,500 and 5,000

Source: Bickert, 1973, page 55.



Table IX-20  
REGIONAL RESIDENT'S ATTITUDES TOWARD POPULATION CONTROL

Statement	Percent of Residents				Percent of Public Officials				
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco	Moffat
The city (county) should limit its overall population.									
Agree	34%	41%	32%	36%	27%	41%	20%	26%	13%
Uncertain	12	17	11	10	14	10	14	11	25
Disagree	54	42	57	54	59	49	66	63	62

Source: Bickert, 1973, page 56.

Table IX-21  
GARFIELD COUNTY RESIDENT'S ATTITUDES  
ON OIL SHALE DEVELOPMENT IN THE AREA

QUESTION. How much do you think oil shale development would benefit this area?		Percent of Respondents
A Great Deal		64%
To Some Extent		24%
Not Very Much		7%
Not At All		<u>5%</u>
Total		100% (214)

Source: Wengert, 1972, page 61.

Table IX-22  
SUMMARY OF REGIONAL RESPONDENT'S ATTITUDES TOWARD ECONOMIC DEVELOPMENT

Statement	Percent of Residents				Percent of Public Officials			
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco
Additional industry should be encouraged to move into this area.								
Agree	78%	43%	80%	65%	77%	75%	83%	84%
Uncertain	8	11	7	10	5	3	—	5
Disagree	19	39	13	21	17	23	14	11
In order to provide additional revenue, more businesses should be encouraged to locate in this area.								
Agree	59%	66%	56%	75%	78%	74%	78%	79%
Uncertain	10	7	11	8	5	3	8	5
Disagree	29	26	31	15	17	23	14	16
We should be doing more to encourage tourism in this area.								
Agree	38%	34%	39%	42%	52%	62%	36%	53%
Uncertain	8	10	7	14	8	5	11	5
Disagree	53	56	54	41	40	33	53	42

Source: Bickert, 1973, page 30.

Table IX-23

## REGIONAL RESIDENT'S ATTITUDES TOWARD OIL SHALE DEVELOPMENT

Statement	Percent of Residents				Percent of Public Officials			
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco
The development of the oil shale industry locally would really help this area								
Agree	64%	53%	67%	67%	73%	67%	83%	68%
Uncertain	22	33	20	17	15	18	11	21
Disagree	14	14	13	15	12	15	6	11

Source: Bickert, 1973, page 58.

Table IX-24

## COLORADO VOTER'S OPINIONS ON OIL SHALE DEVELOPMENT

## QUESTION:

There has been a lot of talk about processing oil shale to remove the oil. Some people say that with our long-range energy problem, we need to develop oil shale because it will bring jobs, income and tax revenue to Colorado. Others say oil shale will damage the environment, bring thousands of new people to the state and divert water from the Colorado River. How strongly would you favor or oppose oil shale development?

	Percent of Voters
Strongly favor	11%
Favor	33
Undecided	20
Oppose	18
Strongly oppose	18

Source: Cambridge Survey Research, 1974, page 11.

Table IX-25

COLORADO VOTER'S OPINIONS ON  
EXPERIMENTAL OIL SHALE DEVELOPMENT

## STATEMENT:

We should begin oil shale development on an experimental basis to see exactly what damage it does cause.

	Percent of Voters
Agree	77%
Don't know	5
Disagree	19

Source: Cambridge Survey Research, September, 1974, page 14.

about Colony. Of those who did have knowledge of Colony, 49 percent felt not at all informed, 38 percent somewhat informed, 12 percent well informed and 1 percent very well informed (Table IX-26).

#### F. Location of Oil Shale Population Impact

There is mixed opinion on the part of local residents as to where oil shale related growth should occur. The Rangely survey shows that Rangely residents would like to see the majority of growth occur in their city. The residents are somewhat opposed to new towns and strongly opposed to centering the majority of growth in Garfield County (Table IX-27). Table IX-27 shows also that Rangely residents have mixed opinions about sharing growth with Meeker.

Meeker residents are somewhat divided about accepting the majority of growth, but they do tend to oppose the occurrence of a majority of oil shale growth in Meeker. Meeker residents are also somewhat opposed to the establishment of new towns and to letting Garfield County take the majority of growth. However, they are in favor of developers assuming the total cost of new city services in the development (Table IX-27). The opinions of Meeker and Rangely residents are probably related to the different histories of the towns. Meeker was chartered in 1880 and many of the original families still remain in the area. Rangely is a fairly new community. Almost all of Rangely's growth has occurred since 1946 and its growth has been directly related to energy development.

Table IX-28 shows that Grand Valley residents would like to see their town become a major population center, although they are also in favor of new towns. The Grand Valley residents, however, are opposed to accepting the financial burdens for growth and feel that developers and new residents should assume most of the costs. Grand Valley residents feel that new towns should be developed, that they will have a significant effect on the region and that Grand Valley residents will be able to influence the course of new town development at Battlement Mesa (Table IX-29).

#### G. Perceived Problems of Rapid Oil Shale Related Growth

The Wengert survey showed that Garfield County influentials in 1972 felt that the Colony plant should be encouraged even if it causes rapid growth; 54 percent of the influentials strongly supported development. The respondents supported development even though 69 percent felt that a rapid population increase would cause problems (Table IX-30). The problems most frequently mentioned were housing, schools, sewage and water.<sup>1</sup>

The Bickert, Browne and Coddington study showed that Garfield County residents were concerned about growth, but almost two-thirds of the public officials in the county had positive reactions to the growth (Table IX-31). Residents in Mesa and Rio Blanco Counties showed some concern about

---

1. Wengert, 1972, pp. 63-64.

Table IX-26

GARFIELD COUNTY INFLUENTIAL'S KNOWLEDGE OF  
OIL SHALE DEVELOPMENT AND COLONY DEVELOPMENT OPERATION

	Knowledge of Oil Shale	Percent of Influentials	Knowledge of Colony
Very well informed	10%		1%
Well informed	28		12
Somewhat informed	42		38
Not at all informed	<u>20</u>		<u>49</u>
Total	100% (224)		100% (210)

Source: Wengert, 1972, page 61.



Table IX-27  
RANGELY AND MEEKER RESIDENT'S OPINIONS ON  
OIL SHALE RELATED GROWTH

RANGELY					
Statement	Agree	Number of Respondents			No Answer
		Strongly Agree	Disagree	Strongly Disagree	
There should be equal growth for Rangely and Meeker.	13	79	69	32	62
The majority of growth caused by the shale oil development should occur in Rangely.	28	123	53	13	38
It is desirable that "new towns" be established to handle the shale oil development.	11	68	63	59	49
We should let communities in Garfield County take the majority of the growth associated with the shale oil development.	8	32	83	95	37

Source: Rangely Times, October 10, 1974, page 2.

MEEKER					
Statement	Agree	Number of Respondents			No Answer
		Strongly Agree	Disagree	Strongly Disagree	
The majority of growth caused by the resource development should occur in Meeker.	18	112	139	63	45
It is desirable that "new towns" be established to handle the resource development.	49	76	146	73	37
We should let communities in Garfield County take the majority of the growth associated with the shale oil development.	46	96	143	53	42
Developers should assume the total cost of new city services for their development.	169	127	48	14	2

Source: Meeker Survey, September, 1974.

the growth although they were more positive about growth than Garfield residents. The residents did not seem to know, for the most part, whether there was a need for growth regulation in Garfield and Mesa Counties. In Rio Blanco County, however, 39 percent of the residents favored growth regulation and only 9 percent opposed it. The public officials reacted positively to growth and were strongly in favor of growth regulation in all four of the counties studied.

#### H. Perceived Advantages and Disadvantages of Oil Shale Development

The Wengert study showed that 51 percent of Garfield County influentials felt that workers in oil shale plants would not be hired locally. The respondents were, however, strongly (91 percent) in favor of the plant making a special effort to hire local people (Table IX-32).

The Wengert study showed that only 20 to 24 percent of respondents expected serious air or water pollution from an oil shale plant. If it would cause serious pollution, most of the respondents thought the plant should be discouraged.<sup>1</sup>

Tables IX-33 and 34 show respondents' attitudes on benefits and detrimental effects of oil shale development according to results of the Bickert, Browne and Coddington study. Overall, jobs and the economy were seen as the greatest advantages. The area residents saw overcrowding and pollution as the worst effects.

The Cambridge study of Colorado voters showed that 32 percent of respondents considered U. S. energy self-sufficiency the greatest advantage of oil shale development, followed by Colorado self-sufficiency (Table IX-35). Of all the respondents, 12 percent felt that there were no advantages at all to oil shale development. The respondents thought the worst disadvantage was general pollution of Colorado, followed by land destruction and overpopulation. Of the voters questioned, 8 percent felt that there were no disadvantages and 15 percent of the voters had no idea of what disadvantages would be connected with oil shale development (Table IX-36).

---

1. Wengert, 1972, p. 63.

Table IX-28

GRAND VALLEY RESIDENT'S OPINIONS ON  
OIL SHALE RELATED POPULATION GROWTH

Statement:	Number of Respondents	
	Agree	Disagree
Because of its position at the head of the transportation corridor for an oil shale industry up Parachute, Grand Valley has little potential for any role in providing a major community for future population in the region	49	105
Despite its position, Grand Valley should aggressively plan for a greatly expanded community, and should attempt to become the focus for population growth in this part of the country.	103	51
Majority of population growth related to a resource industry should go to the existing communities in Garfield County.	98	49
New towns within the county should be established to handle some of the population growth due to development of an energy resource industry.	106	40
The present population should bear a portion of the public expense associated with growth through bonds, increased taxes, service charges, etc.	63	90
Developers and new residents should assume most of the costs associated with the additions made to public service systems — water, sewer, police, fire, etc. in order to service the increased populations.	142	15
If I were a member of the Town Council and Planning Commission, I would proceed with the formulation of a comprehensive plan for Grand Valley.	135	10

Source: Garfield County Planning Department, 1975.

Table IX-29  
GRAND VALLEY RESIDENT'S ATTITUDES ON NEW TOWNS

STATEMENT: A new community has been proposed to Garfield County on Battlement Mesa. As information to County officials do you agree or disagree with the following statements:	Number of Responses	
	Agree	Disagree
The new Town proposal should not be approved under any conditions.	22	121
The new Town proposal will not measurably affect the future of Grand Valley one way or the other.	40	106
If a new town were approved, the task of Grand Valley should be to preserve the small-town atmosphere it has now.	101	55
If a new town is approved, it will not matter what Grand Valley wants as a community, the Town will have no control over future events anyway.	57	86
Whether or not a new Town is approved, the residents of Grand Valley do have the ability to affect to some degree the future of the Town through community planning and communication.	135	10

Source: Garfield County Planning Department, 1975.

Table IX-30  
GARFIELD COUNTY INFLUENTIAL'S OPINIONS ON  
POPULATION GROWTH AND OIL SHALE DEVELOPMENT

QUESTION:	
Should leaders encourage the development of Colony, even if it causes rapid growth?	Percent of Influentials
Support it strongly	54%
Support it somewhat	31
Oppose it somewhat	8
Oppose it strongly	7
	<hr/> 100% (219)
QUESTION:	
Do you think a population increase of this size would cause any problems for the county?	Percent of Influentials
Yes	69%
No	31
	<hr/> 100% (229)

Source: Wengert, 1972, pages 63-64.

Table IX-31  
ATTITUDES OF AREA RESPONDENTS TOWARD GROWTH  
CAUSED BY OIL SHALE DEVELOPMENT

Statement	Percent of Residents				Percent of Public Officials				
	Total Sample	Garfield	Mesa	Rio Blanco	Total Sample	Garfield	Mesa	Rio Blanco	Moffat
Reactions to Population Growth									
Positive reaction	43%	30%	46%	48%	62%	59%	58%	63%	75%
Neutral reaction	27	26	27	27	23	15	31	26	19
Negative reaction	22	32	21	13	11	18	8	5	6
Perceived Need for Growth Regulation									
Need growth regulation	27%	26%	27%	39%	76%	69%	81%	84%	69%
Do not need growth regulation	13	7	15	9	18	18	14	16	31
Don't know; no answer	60	67	58	52	6	13	5	0	0
Median number of migrants expected in first five years of oil shale development	N/A	N/A	N/A	N/A	N/A	3,210	4,187	1,503	250

Source: Bickert, 1973, page 66.

Table IX-32  
GARFIELD COUNTY INFLUENTIAL'S OPINIONS ON  
USING THE LOCAL WORK FORCE FOR OIL SHALE DEVELOPMENT

---

QUESTION:

If a major oil shale processing plant were built here, do you think most of the workers would be new people who moved to the area or would the plant hire primarily local people?

Percent of Influentials

---

New	51%
Half and Half	20
Local	29
	<hr/>
TOTAL	100% (219)

---

QUESTION:

Should the plant make special effort to hire local people?

Percent of Influentials

---

Yes	91%
No	9
	<hr/>
TOTAL	100% (222)

---

Source: Wengert, 1972, page 62.



Table IX-33

REGIONAL RESPONDENT'S ATTITUDES ON  
PERCEIVED BENEFITS OF OIL SHALE DEVELOPMENT

	Percent of Residents			
	Total Sample	Garfield	Mesa	Rio Blanco
Provide more jobs	34%	27%	37%	21%
Provide higher wages; higher standard of living	23	14	26	23
Encourage business; competition	19	10	21	19
Increase population	14	9	15	19
Increase tax base	7	8	7	9

	Percent of Public Officials			
	Total Sample	Garfield	Mesa	Rio Blanco
Raise level of local economy	36%	33%	39%	42%
Provide jobs; higher wages	25	18	33	16
Improve quality of local work force	25	13	33	37
Generate new business	17	15	17	21
Improve quality of life	7	13	6	0

Source: Bickert, 1973, page 59.

Table IX-34  
REGIONAL RESPONDENT'S ATTITUDES ON  
PERCEIVED DETRIMENTAL EFFECTS OF OIL SHALE DEVELOPMENT

	Percent of Residents			
	Total Sample	Garfield	Mesa	Rio Blanco
Overcrowding	8%	10%	8%	8%
Pollution	6	3	7	2
Competition for jobs	2	1	3	0
Environmental damage	4	4	4	3
Damage to scenery	2	0	3	2

	Percent of Public Officials			
	Total Sample	Garfield	Mesa	Rio Blanco
Overburden local services	4%	3%	6%	0%
Change rural life style	3	5	3	0
Overcrowding of facilities	3	5	0	0

Source: Bickert, 1973, page 60.

Table IX-35  
 COLORADO VOTER'S OPINIONS ON ADVANTAGES  
 OF OIL SHALE DEVELOPMENT IN COLORADO

---

QUESTION.

What do you think are the advantages and disadvantages  
 of developing oil shale in Colorado?

Percent of Respondents

---

Solve U.S. energy shortage, make us self-sufficient	32%
Will make <u>Colorado</u> self-sufficient, local oil	14
Help Colorado economy	8
Lower unemployment	8
Tax revenue	2
Brings lower oil prices	4
Other advantages	5
There are no advantages	12
Don't know	15

---

Source: Cambridge Survey Research, 1974, page 9.

Table IX-36  
 COLORADO VOTER'S OPINIONS ON DISADVANTAGES  
 OF OIL SHALE DEVELOPMENT IN COLORADO

QUESTION:	
What do you think are the disadvantages of developing oil shale in Colorado?	Percent of Respondents
General pollution of Colorado	27%
Strip-mining, land destruction	13
Encourages growth and overpopulation	13
Water pollution	4
Waste disposal	1
Wildlife destruction	1
Will cause social and service problems	8
Too expensive	3
Other disadvantages	7
<u>There are no disadvantages</u>	8
Don't know	15

Source: Cambridge Survey Research, 1974, page 10.

---

## SOURCES

---

**A**



## SOURCES FOR THE BASELINE DESCRIPTION

### CHAPTER II: A HISTORY OF THE PICEANCE CREEK BASIN AREA

- Anderson, A. E. 1958. Effects of Sagebrush Eradication on Deer and Related Wildlife. Colorado State Game, Fish and Park Commission
- Aspinall, Congressman Wayne (et al). 1968. History of Public Land Law Development. House Interior Committee, U. S. Government Printing Office.
- Baker, R. D. and Mc Kean, W. T. 1971. Wildlife Management Unit #22 (Piceance). Colorado State Wildlife Division.
- Bolton, Herbert E. 1958. A Pageant in the Wilderness (contains The Escalante Expedition Journal). Utah State Historical Society.
- Boyd, W. J. 1961, 1962, 1964. Study of Deer Losses on Colorado Highways. Colorado State Wildlife Division.
- Burroughs, John Rolfe. 1962. Where The Old West Stayed Young. Bonanza Boods: New York, New York.
- Colorado Magazine. 1974. Article on Oil Shale History. Colorado Magazine, Inc.: Denver, Colorado.
- Colorado State Oil and Gas Conservation Commission. 1919-1968. Annual Reports on Oil and Gas Production for Fields in Moffatt and Rio Blanco Counties. Denver, Colorado.
- Colorado State Yearbooks. 1917-1933. Range Livestock Statistics. Denver, Colorado.
- Cunningham, Hugh. 1971. Soil Vegetative Relationships of a Bitterbrush - Sagebrush Association in Northwest Colorado. MS Thesis, Colorado State University: Fort Collins, Colorado.
- Grand Junction Sentinel. 1974. Oil Shale - The View in 1974. Sentinel Publishing Company: Grand Junction, Colorado.
- Jacobsen, R. 1969. Intensive Inventory and Analysis of Mule Deer. Staff Paper, Bureau of Land Management: Craig, Colorado.
- Kephart, John C. 1973. Sediment Analyses of Big Wash run-off Samples. Grand Junction Laboratories: Grand Junction, Colorado.
- Lavendar, David. 1968. The Rockies. Harper and Row: New York, New York.



- Mc Kean, W. T. and Bartman, R. W. 1971. Deer-Livestock Relationships on a Pinyon-Juniper Range in Northwest Colorado. Colorado Wildlife Division: Denver, Colorado.
- Meeker History Book Committee. 1972. This Is What I Remember. The Meeker Herald: Meeker, Colorado.
- Murray, Erlene D. 1973. Lest We Forget. Published by Quahada, Inc.: Grand Junction, Colorado.
- Rifleshoots. 1973. The History of Rifle, Colorado and Environments. Rifle, Colorado.
- Robertson, J. H. 1947. Responses of Range Grasses to Different Intensities of Competition with Sagebrush. Ecology, vol. 28.
- Rockwell, Wilson. 1956. The Utes - A Forgotten People. The Swallow Press: Denver, Colorado.
- Scott, W. L., et al. 1942. Land, Sky and Water. U. S. Department of the Interior, U. S. Department of Agriculture: Albuquerque, New Mexico.
- Sprague, Marshall. 1967. The Mountain States. Time-Life: New York, New York.
- \_\_\_\_\_. 1957. Massacre - The Tragedy at White River. Little, Brown and Company: Boston, Massachusetts.
- Urquhart, Lena M. 1967. The Cold Snows of Carbonate. Golden Bell Press: Denver, Colorado.
- \_\_\_\_\_. 1970. Glenwood Springs - Spa in the Mountains. Pruett Publishing Company: Denver, Colorado.
- United States Department of Agriculture, SCS. 1972. Salinity Outflow from Range Land. SCS State Office: Denver, Colorado.
- \_\_\_\_\_. 1973. On-Farm Salinity Control Investigations in the Grand Valley. U. S. Government Printing Office: Washington, D. C.
- Walker, W. R. 1957. Hydro-Salinity Model of The Grand Valley. MS Thesis, Colorado State University: Denver, Colorado.
- Welles, Crhis. 1970. The Elusive Bonanza. E. P. Dutton Company: New York, New York.
- Woodhead, P. V. and Schwan, H. E. 1935. The Yampa Dependency Zone Study. U. S. Forest Service, Regional Office: Denver, Colorado.
- Works Progress Administration. 1936. Colorado State Guide Book. U. S. Government Printing Office: Washington, D. C.

### CHAPTER III: LAND USE

Colorado Division of Wildlife. 1974. Colorado Big Game Harvest Book. Colorado Department of Natural Resources, Federal Aid Project W-121-R: Denver, Colorado.

Colorado West Area Council of Governments. 1974. Oil Shale and The Future of a Region: Garfield, Mesa and Rio Blanco Counties, Colorado, A Summary Report. September.

Mc Dowell-Smith and Associates. 1975. Evaluation of Selected Community Needs. Rifle and Boulder, Colorado. August.

\_\_\_\_\_. 1975. Evaluation of Selected Community Needs: Land Use; Land Use: Meeker; Land Use: Rifle. Draft. Rifle and Boulder, Colorado.

Sandfort, Wayne. "Wildlife and the Environment." Colorado Wildlife Report, Information Series 7, Environmental Resources Center, Colorado State University, 1973.

THK Associates, Inc. 1973. Physical Planning Elements: A Description of Physical Characteristics (Garfield, Mesa and Rio Blanco Counties). Denver, Colorado. November.

U. S. Bureau of the Census. Census of Agriculture. 1969. Volume I, Area Reports. Part 41, Colorado. U. S. Government Printing Office: Washington, D. C., 1972.

\_\_\_\_\_. Census of Business. 1967. Volume II, Retail Trade - Area Statistics. Part I, U. S. Summary and Alabama to Indiana. U. S. Government Printing Office: Washington, D. C., 1970.

\_\_\_\_\_. Census of Business. 1967. Volume V, Selected Services - Area Statistics. Part I, U. S. Summary and Alabama to Indiana. U. S. Government Printing Office: Washington, D. C., 1970.

U. S. Department of the Interior. 1973. Final Environmental Statement for the Prototype Oil Shale Leasing Program. Volume I, Regional Impacts of Oil Shale Development. U. S. Government Printing Office: Washington, D. C.

#### CHAPTER IV: ECONOMY OF THE REGION

- Bickert, Browne and Coddington and Associates, Inc. 1973. Attitudes and Opinions Related to the Development of an Oil Shale Industry. Prepared for the Oil Shale Regional Planning Commission and the Colorado West Area Council of Governments. July.
- Colorado Department of Revenue. 1960, 1970, 1974. Annual Sales Tax Statistical Summaries.
- Colorado Division of Employment. 1975. Annual Manpower Planning Report for Fiscal Year 1976.
- Colorado Division of Employment. 1974. County Labor Force Estimates.
- Gilmore, J. S., and M. K. Duff. 1973. The Oil Shale Regional Economic Base (Garfield, Mesa and Rio Blanco Counties). Working paper No. 1 for Oil Shale Regional Planning Commission. Rifle, Colorado.
- U. S. Bureau of the Census. Census of Population. 1950. Vol. II, Characteristics of the Population, Part 6, Chapter B, Colorado. U. S. Government Printing Office: Washington, D. C.
- U. S. Bureau of the Census. Census of Population. 1960. General Social and Economic Characteristics, Colorado. U. S. Government Printing Office: Washington, D. C.
- U. S. Bureau of the Census. Census of Population. 1970. General Social and Economic Characteristics, Colorado. U. S. Government Printing Office: Washington, D. C.

## CHAPTER V: POPULATION

Colorado University. Business Research Division. 1972. Colorado population trends, Vol. 1, No. 1, Winter, 1972: An Analysis of Colorado's Population Growth, 1960-1970. Prepared for Colorado Division of Planning: Boulder, Colorado.

\_\_\_\_\_. Business Research Division. 1972. Colorado population trends, Vol. 1, No. 3, Summer, 1972: Composition of the Colorado Population by Race and Sex, 1970. Prepared for Colorado Division of Planning: Boulder, Colorado.

\_\_\_\_\_. Business Research Division. 1972. Colorado population trends, Vol. 1, No. 4, Fall, 1972: Economic and Social Characteristics of Coloradans. Prepared for Colorado Division of Planning: Boulder, Colorado.

\_\_\_\_\_. Business Research Division. 1973. Colorado population trends, Vol. 2, No. 1, Winter, 1973: County Population Methods and Estimates - 1971 and 1972. Prepared for Colorado Division of Planning: Boulder, Colorado.

\_\_\_\_\_. Business Research Division. 1973. Colorado population trends, Vol. 2, No. 3, Summer, 1973: Colorado Population Projections for 1975 and 1980. Prepared for Colorado Division of Planning: Boulder, Colorado.

Colorado University. Graduate School of Business Administration. Colorado County Population Estimates, 1970-1980: Methods and Results, Summary Report, Colorado Division of Planning.

Gilmore, J. S., and M. K. Duff. 1973. Impacts of Oil Shale Development: Concepts and Remedies. Working paper No. 3 for Oil Shale Regional Planning Commission. Rifle, Colorado.

Mc Dowell-Smith and Associates. 1975. Evaluation of Selected Community Needs: Rifle and Boulder, Colorado.

Office of the Governor of Colorado. 1974. IMPACT: An Assessment of the Impact of Oil Shale Development--Colorado Planning and Management Region 11, Volume V, Population. December.

THK Associates, Inc. 1973. Impact Analysis and Development Patterns for The Oil Shale Region (Mesa, Garfield, and Rio Blanco Counties). Prepared for The Oil Shale Regional Planning Council and the Colorado West Area Council of Governments: Denver, Colorado. September.

U. S. Bureau of the Census. Census of Population. 1940. Characteristics of the Population, Colorado. U. S. Government Printing Office: Washington, D. C.

- \_\_\_\_\_. U. S. Bureau of the Census. Census of Population. 1950.  
Vol. II, Characteristics of the Population, Part 6, Chapter B,  
Colorado. U. S. Government Printing Office: Washington, D. C.
- \_\_\_\_\_. Census of Population. 1970. General Population Characteris-  
tics. Colorado. U. S. Government Printing Office: Washington, D. C.
- \_\_\_\_\_. Census of Population. 1970. Vol. 1, Characteristics of  
the Population, Part A, Number of Inhabitants, Section 1, Alabama -  
Mississippi. U. S. Government Printing Office: Washington, D. C.
- \_\_\_\_\_. 1973. Federal-state cooperative program for population esti-  
mates. Series P-26, No. 17. Estimates of the population of Colorado  
Counties, July 1, 1971 and July 1, 1972. U. S. Government Printing  
Office: Washington, D. C. February.
- \_\_\_\_\_. U. S. Bureau of the Census. 1975. Federal-state cooperative  
program for population estimates. Series P-26, No. 103. Estimates  
of the Population of Colorado Counties and Metropolitan Areas:  
July 1, 1973 and July 1, 1974. April.
- Wengert, N. 1973. Oil Shale Country Fact Book: Garfield, Mesa, Moffat,  
and Rio Blanco Counties, Colorado. Colony Development Operation:  
Denver, Colorado.

CHAPTER VI: GOVERNMENT AND TAX BASE

Colorado Division of Local Governments. Department of Local Affairs.  
1969, 1970, 1973. Local Government Financial Compendiums.

Colorado Division of Property Taxation. 1974. Fourth Annual Report.

Colorado Department of Revenue. 1964, 1970, 1974. Twenty-Third Annual Report, June, 1964; Twenty-Ninth Annual Report, June, 1970; Thirty-Third Annual Report, June, 1974.

Colorado Tax Commission. 1971. Fifty-Ninth Annual Report. March.

U. S. Bureau of the Census. 1967. Census of Governments. Volume 7,  
State Reports. No. 6, Colorado.

Wengert, N. 1973. Oil Shale Country Fact Book: Garfield, Mesa, Moffat, and Rio Blanco Counties, Colorado. Colony Development Operation:  
Denver, Colorado.

## CHAPTER VII: HOUSING

Bowers, James, and Associates. 1974. Housing Report. Prepared for Colorado West Area Council of Governments. January.

Colorado Division of Housing. 1973. Current Inventory and Needs: April 1, 1973 (A Supplement to Current Inventory and Needs: January 1, 1972). June 30.

Colorado Division of Planning, Demographic Section. 1975. Summary of Building Construction in Colorado Counties, 1974. July 18.

\_\_\_\_\_. 1975. Building Construction in Colorado Counties, 1960-1974 - Number of New Single Residences. July 21.

\_\_\_\_\_. 1975. Building Construction in Colorado Counties, 1960-1974 - Number of Apartments and Duplex Units. July 22.

Mesa County Citizen's Advisory Planning Group, Subcommittee on Housing. 1975. Housing Supply and Housing Needs in Mesa County, 1975.

Task Force '76. 1973. Preliminary Regional Goals and Issues. Prepared for the Oil Shale Regional Planning Commission and the Colorado West Area Council of Governments (unpublished report.) July.

U. S. Census. Census of Housing. 1960. General Housing Characteristics, Colorado. U. S. Government Printing Office: Washington, D. C.

\_\_\_\_\_. 1970. Detailed Housing Characteristics, Colorado. U. S. Government Printing Office: Washington, D. C.

\_\_\_\_\_. 1970. General Housing Characteristics, Colorado. U. S. Government Printing Office: Washington, D. C.



## CHAPTER VIII: MUNICIPAL SERVICES

### Education

Colorado Department of Education. 1975. Consolidated Report on Elementary and Secondary Education in Colorado: Denver, Colorado. February.

Colorado Department of Education, Division of School Finance and Data Services. 1975. Pupil Membership and Related Information, Fall, 1974, and Colorado Public High School Graduates, 1969-70 and 1973-74: Statistical Series No. 75-4. May.

Office of the Governor of Colorado. 1974. IMPACT: An Assessment of the Impact of Oil Shale Development--Colorado Planning and Management Region 11, Volume III, Human Services Other Than Health. December.

Task Force '76. 1973. Preliminary Regional Goals and Issues. Prepared for the Oil Shale Regional Planning Commission and the Colorado West Area Council of Governments (unpublished report). July.

### Transportation

Colorado Department of Highways. 1975. Colorado's Annual Highway Report for 1974: Denver, Colorado.

\_\_\_\_\_. 1975. Construction Bulletin. August.

\_\_\_\_\_. 1970. A Guidebook on Highway Funding: Denver, Colorado.

\_\_\_\_\_. 1975. Highway News. August.

\_\_\_\_\_. 1975. Colorado Highways Road Map.

U. S. Department of Transportation, Federal Highway Administration. 1974. Federal Highway Program Manual, Volume 7, Chapter 7, Sections 2 and 5. December 30.

### Power and Utilities

#### Interviews:

Roger Purdy, White River Electric Association.

Jeff Smith, Colorado-Ute Electric Association.

Louis Supancic, Public Service Company of Colorado.

Sam Miller, Western Slope Gas Company.

Orville Shockley, Rocky Mountain Natural Gas Company.

The Colorado Public Utilities Commission.

### Fire, Police and Ambulance

Task Force '76. 1973. Preliminary Regional Goals and Issues. Prepared

for The Oil Shale Regional Planning Commission and The Colorado West Area Council of Governments (unpublished report). July.

Interviews:

Roy Rainey, Glenwood Springs.  
Dan Deppe, Rifle City Manager.  
Captain R. L. Burnett, Grand Junction Police Department, Special Services Commander.  
Jim Calhoun, Meeker Town Manager.  
Dan Giltz, Rangely Town Manager.

Water, Sewer and Solid Waste Disposal

Interviews:

Roy Rainey, Glenwood Springs.  
Dan Deppe, Rifle City Manager.  
Jim Calhoun, Meeker Town Manager.  
Dan Giltz, Rangely Town Manager.

Health, Hospitals and Public Welfare

Task Force '76. 1973. Preliminary Regional Goals and Issues. Prepared for The Oil Shale Regional Planning Commission and The Colorado West Area Council of Governments (unpublished report). July.

## CHAPTER IX: PUBLIC OPINION

Bickert, Browne and Coddington and Associates, Inc. 1973. Attitudes and Opinions Related to the Development of an Oil Shale Industry. Prepared for the Oil Shale Regional Planning Commission and the Colorado West Area Council of Governments. July.

Cambridge Survey Research. 1974. An Analysis of Attitudes Toward Oil Shale Development in the State of Colorado. Prepared for the Oil Shale Corporation (unpublished manuscript). September.

Garfield County Planning Department. 1975. A Questionnaire for Grand Valley Residents. June 17.

Meeker Town. 1974. Area Opinion Survey: Meeker, Colorado. September.

Rangely Times. 1974. Rangely Town Area Opinion Survey. September 12, 19, 26 October 10.

Wengert, Norman. 1972. Attitudes and Opinions of Influentials in Garfield County. June. In Community Development Studies, Volume 17: Appendix to the Environmental Impact Analysis of the Colony Development Operation. 1974.



[illegible]

USDI - ELM

